Introductory Lecture

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Gentlemen,—In a work written nearly 600 years ago by a Franciscan friar, one of those early cultivators of science who were looked upon as magicians by their contemporaries, and whom we too often picture to ourselves as merely engaged in vain searches after the philosopher's stone, occur these remarkable words:—"If every man from his youth would exercise a complete regimen, which consists in (the regulation of) these things,—meat and drink, sleep and watching, motion and rest, evacuation and retention, air, the passions of the mind; if a man would observe this regimen from his nativity, he might live as long as his nature assumed from his parent would permit, and might be led to the utmost term of nature, which term, nevertheless, he could not pass."

And following up this idea, the author, Roger Bacon, wrote another remarkable treatise, entitled, "The Cure of Old Age and the Preservation of Youth," which, if divested of its antique garb, and freed from some subtleties which the acute but fanciful mind of the Arabian physicians had introduced into medicine, will be found to embody much thought and shrewd observation on these subjects of universal interest. For who is not interested in the preservation of youth and the cure of old age?

The cure of old age! We do, indeed, know an old age which needs no curing. We can all recall examples of an old age with which Time has gently dealt; in which the body has indeed preserved its youth, even to its fullest term, and the mind, enlarged by experience and corrected by trials, has even increased in clearness and truthfulness of view, and has lost nothing of its youthful strength. We all know old men who are the very types of a higher and purer manhood; whose age is no decadence, but only an onward step in a life of activity and usefulness; who unite, indeed, the wisdom of the serpent and the innocence of the dove; and on whose ripened years wait "honour, love, obedience, troops of friends, and all that should accompany old age." That is not an old age that need be cured. We might as well desire to rebuild those old churches which adorn the land, grey and venerable it may be with the lapse of many generations, but still stable and enduring as when the piety of our forefathers first reared them.

Roger Bacon was no idle dreamer, who sought in some universal elixir the means of staying the course of time, and of preserving for ever the bloom of youth and the freshness of the morning. He did indeed, with the natural enthusiasm of one who saw how much evil could be averted, fancy that the term of man's life might be prolonged, even, it might be, for two hundred years; but he also clearly saw that Nature has, as he phrased it, "an utmost term," which cannot be exceeded. Yet he perceived, as we do, that there is an old age to be cured; that there are numberless instances of age which comes before its time—of a body decayed even before its term of growth has passed—of strength gone—of intellect waning—of death commencing at a time of life when, according to Nature's laws, the body should be in all its vigour and the mind in all its strength.

Nothing, indeed, is more certain than that there is an extraordinary—an appalling waste of human life. Let us remember how many children die before a single year is completed; how many fall in early youth; how few, how very few, attain the Psalmist's term of threescore and ten years. And this mortality represents an unknown but immense amount of illness and suffering—of bodily and mental pain, which the mind cannot at first sight reconcile with those attributes of benevolence and love which yet, we firmly believe, guide the stars in their courses, and regulate the government of the world.

There may be, indeed, men who refuse to see in the waste of human life anything unusual and exceptional; who point to the fact, that Nature everywhere creates and destroys with inconceivable rapidity; that every flower produces, it may be, hundreds or thousands of seeds, of which only one survives; that many animals multiply at such a rate that their progeny would soon fill the earth if the extraordinary balance of natural conditions did not destroy on a scale of equal magnitude. Man, it may be argued, is placed under the same conditions, and it is chimerical to suppose that his puny intelligence can modify the inflexible and impartial laws which regulate matter and its forces. To a belief so gloomy and depressing as this, it is, perhaps, sufficient to reply, that there is evidence to prove that man's intelligence has been purposely made great enough to influence his own destiny, and that he has been really permitted to direct, in a certain degree, the material agencies which encompass him.

There may be others again who, admitting the possibility that man by his intelligence may influence the conditions which affect his health, yet entertain little hope that this will practically be done. The carelessness, the selfishness, and the vices of men; the temptations to which the weakness of his nature too often renders him a prey; the extremely complex conditions of his social life; and the arduous efforts, both of body and mind, which in many cases he must make to gain even a bare subsistence,—render it in their view improbable that the Utopia will ever be reached in which the causes that act prejudicially on life will be removed, and only those which favour health remain.

Some reasoners again may ask, What is the object aimed at? Is it wished to prolong life? But we do not know what is the natural term of life. The "threescore years and ten" may merely imply that some few men reach that age, not that it is the average duration, for if it were so it could hardly be true that at "fourscore years" there would be only "labour and sorrow," since an average of seventy years of life would imply the possession on the part of a large number of men of much strength at that age, and of a duration of life considerably over a century. Doubtless there is a natural term of life, and a certain period of decay, as of growth; but it may be said that whether it be the thirty-eight or forty years which is the average age at death in this country, or the seventy years of the Psalmist, or the one hundred years which Flourens has attempted to deduce from his law of growth, or the two hundred years which the Vicomte de la Passe has still more vaguely inferred, or any greater number, is yet uncertain.

What, then, it may be said, is aimed at, and what reason is there for thinking that there is any waste of life at all, or any anticipation of that utmost term which even Roger Bacon knew could not be overpassed?

But arguments such as these carry no weight whatever. Even granting that the normal length of human life is not known, the slightest observation shows that it is much shorter than it ought to be. If we adopt Roger Bacon's point of view, and look at the effect of individual management, how many men do we see busily occupied in shortening their lives, either from ignorance of the simplest laws of health, or from a contemptuous disregard of them! No one can at all have investigated the great subject of the causes of disease, without seeing how marvellously the ignorant or the vicious man shapes his own course and determines his own future. And if it be answered that it is chimerical to expect that Roger Bacon's precepts will be attended to, and that every man will "exercise a complete regimen from his youth," and will have eyes to see and sense to act in the manner that is most beneficial to him, the reply may be, that whether it is likely or not, it is at any rate possible, and that its likelihood is increased by the fact that, as in so many other cases, it is for a man's self-interest to adopt the most reasonable and proper course.

But passing from Roger Bacon's somewhat narrow point of view, not only is life thus shortened by a man's own actions, it is also greatly influenced by circumstances which admit of alteration by others, if not by himself. How immensely some men influence the health of their fellow-men I need not say. What a step it would be if everyone would see that there is no isolation in this world, but that links which cannot be broken connect us all! If it were possible that every employer of labour in these countries suddenly endeavoured to realize that profound Christian law which recognises the mutual action of man on man as one of the great means by which the moral government of the world is carried on, and tried to do his duty to his neighbour, how great would be the effect on health! Unhealthy trades, which annually kill their thousands, would disappear; unhealthy dwellings, which sap the health of entire communities, would no longer disgrace our towns; selfish laws,

which benefit one class at the expense of others, would never be enacted; and every man would know that in some way or other, small or large, direct or indirect, he had power to influence the health of some of his fellow-men, and was responsible for his power.

One of the most cheering features of our time is the growth of public opinion in this direction. It is owing to this public opinion that the unhealthy factory life of the last generation is now, thanks to better buildings, improved ventilation, and well-arranged hours of labour, becoming a healthy trade; that landlords all over the country are improving the dwellings of their labourers; that men of science are constantly endeavouring to avert the hazards of dangerous trades; and that Government is gradually becoming convinced that legislation must give force and direction to the convictions of the public conscience.

In no way has this been more strikingly shown than in the case of the Army and Navy. In these services Government is a gigantic employer, and places its labourers under its own conditions. It does what it likes with its soldiers and its sailors—sends them over the world, locates them, clothes them, feeds them as it likes. It destroys almost entirely the free agency of the individual, and to a great extent holds in its own hands the influences which regulate health and life. On Government therefore, and on every officer who acts under it, is thus thrown a vast moral responsibility; and if our religious belief is to have any weight at all, we must recognise this to be no mere phrase, but an actual obligation, which all those concerned will have to meet. Government therefore, and all its administrators, are bound to see that the health of those whom they employ is in no respect damaged, or, at any rate, that every known means is taken to prevent damage. And it so happens that in this case, as in so many others, the duty of Government and its interest are identical. Even on the lowest grounds, as a matter of economy, as a means of obtaining willing and faithful service, as a means of increasing efficiency, and of deriving the greatest effect from the materials employed, the improvement of the health of men in the public service is a question of paramount importance. That this is now fully recognised by Government I need not say; it has been shown in a variety of ways: improvements have been initiated, evils removed, customs changed; and thus already, as we shall hereafter see, a marvellous effect has been produced on the health of the army.

But it may be said, even if such somewhat Utopian dreams could be realized, and if all that man could do individually or in community to improve his health and prolong his life were done—if the Priest and the Physician were alike listened to and obeyed, there would yet remain agencies enough to poison the springs of health, and to shorten even that narrow span of life which a vain philosophy may dream about, but cannot enlarge. How, it may be asked, can we deal with that mysterious problem the effect of race and inheritance which induces so many of the more recondite and fatal maladies? how control the elements ever at war against the feeble frame of man? how neutralize the unknown agencies which spread the epidemic and contagious diseases, and scourge as with a sword from Heaven the nations of the earth?

And, indeed, these questions embrace some of the most difficult points the physician has to consider, and cannot as yet be thoroughly answered. Yet something may be said. The effect of inheritance is, indeed, great; and "the nature assumed from the parent," to use Roger Bacon's phrase, often weighs upon a man during his whole life. Yet even here the dominant tendency can be often neutralized or weakened. If it is foreseen, much may be done to ward off disaster both to the mind and body, and the tendency then weakens with each successive generation, or is controlled by the healthier influence of the other parent. Or if, unhappily, this is not done, and if the tendency, of whatever kind, is intensified in the offspring by predisposition from both parents, a remedy—a stern but necessary remedy—is still provided, which sacrifices the individual to the race. Such unhealthy families die out: the stronger races survive, the feebler succumb; and by this process of selection the health of the community is preserved—perhaps, under certain circumstances, is even improved. And however slowly such a custom may arise in our social state, there can be little doubt that more and more attention will be paid by each generation of men and women to the bodily and mental health of those with whom they elect to pass their lives; and thus, as among the lower animals the principle of selection secures a continual increase of beauty and strength, so among men the effects of inherited disease will be continually weakened, and at length averted.

As to the material conditions which surround man, and which certainly influence greatly his health, nothing is more certain than that his intelligence can greatly control them. They are formidable because misunderstood or misdirected. The soil may pour forth its malaria, but the engineer can drain it and turn the deadly morass into a fruitful and healthy field; the cold wind may chill, but we can call into use hidden sources of warmth; the air may carry its poisons, but yet bears within itself the means of its own purification, if men will assist, or will even only refrain from arresting, the beneficent changes of Nature. No, we may safely hold to the faith that Nature is no hard mother to her children, and only punishes them for their ignorance or neglect.

And as to the contagious and epidemic diseases which appear so mysterious, their causes oftentimes lie at our own thresholds. It is not wonderful, indeed, that men should have thought otherwise. Those fearful plagues which have passed over the earth, and have half depopulated countries, have naturally strongly excited the imagination of those who witnessed them. In their eyes the grandest images could alone adequately express the effect of those storms, before which courage grew pale and even religion faltered. We all remember the lofty terms which have alone seemed to some writers appropriate for the opening of their works on the mediæval plagues of Europe. The powers of nature are represented as coming into violent collision: in the air are thunder and storm; a dark pall shuts out the sun; blood rains on the fields; strange portents cross the sky; dumb creatures tremble and fly the accursed spot; and over the doomed people the destroying angel waves his flaming sword. And yet these are but the wild imaginings which great events excite in the awestruck mind. The wrath of Heaven is, indeed, acting, but man is the instrument of his own punishment, and it is his ignorance which creates these terrible catastrophes. Granted that there are many things yet obscure; that it is wonderful how the agents of small-pox or scarlet fever should be gifted with a potency so enduring; that it is inexplicable what force should ever and again send cholera wandering over the face of the earth, it is yet certain that we must look in many, if not in all, cases to the most simple conditions for the spread of the zymotic diseases, and to the most elementary hygienic rules for their prevention. In fact, it is in this direction that the greatest triumphs of hygienic science have been, and will for some time continue to be, won.

The more, indeed, we consider the causes which shorten and destroy life, the more shall we be convinced that the possibility of a great improvement in the health of the individual, of the community, and of the race, is no empty dream. How far such an improvement can be carried no one can tell, but the concession of the possibility at once points out a duty and necessitates an action. Suffering and pain may, indeed, always be our destined lot, but still we should infer that it is not intended that intelligence shall always remain unrewarded and hope unsatisfied. The greatest encouragement for hope and for action is to be found in the results which have constantly followed the application of the laws of health which physiology and pathology point out. There is no case yet known in which disappointment has followed properly-considered measures for improving the public health, and there are many instances in which unexpectedly favourable results have been obtained.

Examples could be cited in abundance, were this the time, to show how easily public health can be improved, and human life prolonged, and which prove how immense is the power men can thus exert over their own welfare. To make this power known, and to show how it must be used, should be one of the great objects of the science of Medicine. To teach the individual to preserve his own health—to awaken his sense of the responsibility to the power he can exert over the health of others—to show him how to apply his mastery over Nature for his own good, is, I believe, the great philosophy, more glorious than that of the Garden or the Porch, which the Physician must in future proclaim by the side of those still higher truths which fall within the province of the Priest.

But, in truth, physicians in all ages have not been slow to perceive and to proclaim these things. Roger Bacon was not the first to write on the "cure of old age." He constantly refers to writers of older times, and these in turn call up the opinions of those who have gone before. And thus the subject can be traced back, dimly it is true, but still perceptibly, to the most ancient records, and can be shown to have excited the interest alike of the Arabian, the Roman, and the Greek. And since the time of Roger Bacon there has been no want of writers on this topic; some dreaming, some speculative, some wise and

clear, until we come down to the days of Hoffmann, with his "Seven Laws of Health," or later still, to the unequalled teachings of Andrew Combe, and to the cogent statistical arguments of William Farr.

Amongst the best English writers on this subject must certainly be placed a large number of army and naval surgeons. Owing, probably, to the circumstances under which they were placed, circumstances which showed more commonly than in civil life the vast and rapid destruction of human life which sometimes occurs, their attention appears to have been forcibly directed to the prevention of disease. And many of them discussed this matter with a good sense which renders their works still most instructive, and some with a sagacity which places them in the highest rank of observers. The works of Pringle, who witnessed the campaigns in Flanders in 1741 and succeeding years; of Donald Monro, who saw those in the Low Countries and in Germany in 1760; of Brocklesby, who served at a period a little later; of Robert Jackson, the prince of army surgeons, who saw the whole of that stormy period which commenced with the American war of independence; of Hunter and Lempriere and many others, who witnessed the tragedies in the West Indies towards the end of the last century; of Sir James M'Grigor, the able administrator and man of business; or of Luscombe, the model of the efficient army surgeon in the Peninsular campaigns; of Henry Marshall, that man of genius whose lot was cast in the torpid times which followed the wild excitement of the imperial wars;—these, and many other works by military and by naval surgeons, (by Lind, Trotter, Gillespie, Blane, &c.,) have had an immense influence in gradually developing the grand subject of the preservation of health and the prevention of disease.

And coming down to our own time, we find no falling off in this respect. It would be impossible, and perhaps invidious, to attempt an enumeration of the numerous papers and essays which have of late years been written by army surgeons. But one or two works have exerted a great effect. It is decidedly from the reports of Marshall, Tulloch, and Balfour—which illustrated by the irresistible logic of statistics the causes of the mortality among the Queen's troops,—that the measures for reducing the death-rate in the army took their commencement. And these reports have had also a large effect in calling the public attention to the subject of preventable disease generally, by appealing to evidence which the general as well as the scientific public could at once understand and appreciate.

In another direction the writings and exertions of an army surgeon, the present Physician to the Council of India—whose name will hereafter be placed in the same roll which includes the honoured name of Robert Jackson,—consistently directed, for more than thirty years, the attention of the Government and the nation to the sanitary condition of India and its army, and have had no small share in bringing about that series of improvements which are now commencing, and which will inevitably add in an untold degree both to the happiness and the efficiency of the British soldier serving in the East.

And even the fiery trial of the Crimean War has not been without its good result. Throughout the whole army it appears to have made this great subject one of unusual interest; it excited to the utmost the energies of army surgeons; it produced the excellent and elaborate "Medical History of the Eastern War" of Andrew Smith; it brought to bear on military hygiene the sanitary aptitude of Sutherland; excited the earnest and self-sacrificing efforts of Miss Nightingale; and engaged in the task—alas for too brief a time—the noble powers and grand opportunities of that statesman who died too soon for his country, and with whom died

"The many hopes of unaccomplished years."

Under the influence of a growing public opinion, created partly by writers on hygiene, and partly by the stern experience of war, the health of the army has been for some years more and more attended to. It was time; for the great losses of men which had yearly taken place in time of peace had been hardly borne by this country, and in years to come would not be borne at all. We are even now like the old Romans, and our frontiers are almost too large for our strength. With a population not numerous, and well employed in a great and growing trade, this country garrisons vast dependencies, and at all points confronts formidable neighbours. From year to year, while trade continues good, an increasing difficulty will be found in obtaining men, or the wages of service must be raised. To consider, then, the health of the soldier in every way; to render the service worth his seeking; to obtain from him the longest period of work, and the most vigorous career of duty, is a matter of policy as evident as the moral obligation which should bind us to the same course.

And there is every reason to think the improvement now obvious will go on—first, because, great as it has been, there are yet on every side evils to be combated; and secondly, because there are such unusual facilities for combating them. With one or two exceptions, the life of the soldier, considered as a trade, need not be carried on in time of peace under adverse sanitary conditions. It is true that the man born in the most temperate of islands passes to all climates, and may be subjected to the fiercest extremes of heat and cold. But climate has been the scapegoat of many sins, and everywhere in the British dominions healthy spots are found in singular abundance. A second evil is greater: the strong young man, brought into the highest state of vigour at an age when passions are strongest, and self-control is weakest, is then like a young monk (but without the young monk's moral restraints), shut out from the domestic ties which are the safeguards from so many and such frightful evils. In the trade of the soldier this is one great and persistent difficulty; he is unnaturally torn from those influences which it is not good for man to be without. That the immense standing armies of our time will widely affect the populations from which they are drawn is evident. Our descendants will trace better than we can this curious action. For us the chief interest is in the effect on the soldier himself. How this matter is to be met it is not easy to say: whether by stationary legions and military colonies, as among the Romans, or by a greater expenditure in allowing a much larger proportion of women to accompany their husbands, is not clear. But certain it is that the evils of an enforced celibacy are great and manifold, and must not be neglected. Apart from this the soldier can manifestly be placed in time of peace under almost any conditions that may seem desirable, and the great object is now to define precisely these conditions, and to apply them in all cases where insuperable military objections do not exist. In time of war, however, the question is not so easy.

War is a ruthless master, and pitilessly scatters to the wind the most careful arrangements. In all wars the sacrifice of life has been enormous, and in fact this has been one great check on aggressive and martial nations. It is, indeed, wonderful to see how in campaigns a great army melts away like snow under a midday sun. Napoleon, the great captain of modern times, assembled an immense army, and provided for it with all the forethought which his far-seeing genius could command. Before he entered the nearest province of Russia, before even the first note of real war had been sounded, his eagles had seen the loss of 50,000 men. Our own day has shown us something similar. The great Federal American army has been cared for as no other army ever was before. Profiting by our experience, and applying as an ingenious and quick-witted people might be expected to apply, the rules laid down in the English army since the Crimean war, the Americans succeeded, during the whole of last winter, in maintaining their immense army in an extraordinary state of health. It did, indeed, seem as if at last war was to be robbed of half its victims. But how have these anticipations been shattered by the rude touch of actual movements in the field! We shall never know the losses by disease in those wild campaigns; the sombre veil which covers them will never be raised for us, but enough is known to assure us that the destruction, great as it has been by sword and shell, has been, as in all other wars, far surpassed by the arrows of disease.

And yet, in looking over the history of wars, it is singular how obvious seem the causes which have produced the great mortality, and how easily one can put one's finger on the errors of omission and commission. If this had been done, if this had not been done, we may say, all would have been well; and yet war after war the same conditions are again repeated, and are followed by the same results. Is it that war is so intricate a thing that it is impossible to meet in time its ever-varying conditions? or is it thus that Providence designs to check the turbulence of men?

And yet our own history, and especially the last campaign in China, seems to show that a wise forethought *can* greatly prevent the diseases of war. The military history of the Romans, as far as it is known, shows that that martial and imperial race knew how to guard against many of the evils which have often almost swept away the armies of modern states.

At any rate here is another task for the army surgeon. His military superior will naturally require him to study profoundly the diseases of war, to trace their causes, and, as far as possible, to point out their remedies. The army surgeon should be, in fact, the right hand of his general, watching for and warding

off, as far as it can be done, those causes of weakness which may enfeeble the force the soldier directs.

It is impossible to read the works, reports, and essays which have been published by the medical officers of the British service, without acknowledging that many of them understood perfectly how to perform this great and responsible office. The profession of medicine may well be proud of the members of this service, who have enhanced the dignity and increased the usefulness of our common calling.

In the list of those who have belonged and who still belong to this noble service some of those who hear me to-day are about to enrol themselves. In so doing they will inherit a portion of the fame which rests on the past, and will become responsible for the exertions and conquests of the future. I am sure I need not urge upon them the responsibility they undertake in entering the medical service of the army—a responsibility greater even than that in civil life, inasmuch as the professional position of the army surgeon is more isolated, and those who depend upon him for advice can seek no other aid. There are many duties to perform for which our civil training does not prepare us, and many professional topics which require a fuller discussion than they can receive elsewhere.

In this school you will have explained to you by my colleagues the various surgical and medical points in which the practice of our profession differs from that in civil life, and will have your attention directed to those canons of health which are applicable to your future duties.

By attention to what is taught in this school you will be prepared to enter on your service, and to perform its multifarious duties with success; and in performing them with success you ought to find, and will find, your chief happiness. You will be in a position of great usefulness—"a helper of man," as the old motto has it, literally, "throughout the world;" and in all the varied phases of that famous military life which you will accompany and witness, officers and men should alike turn to you with confidence as able to do for them all that can be done in their hours of sickness and peril. You will then be recognised as a worthy associate in that grand English army which is now engaged all over the world in the work of peace; which everywhere is the servant of justice and of right; which watches over the youth of infant nations; which in the East and in the West alike represses anarchy, repels aggression, and in the midst of turbulent and disorderly nations maintains the rights and advances the cause of humanity. No nation has performed such a work since the Roman legions recoiled before the barbarian hordes. To do one's part worthily in so great a labour, and to spread throughout the wide range of the British possessions those rules of health which render both mind and body better instruments in the great work of improvement, is surely a career which might satisfy the ambition of anyone. Such a career is now open before you, if you have strength enough honestly and loyally to fulfil its duties; and these duties possess happily something of the divine quality of mercy, which we are told carries a twofold blessing—blessing the giver and receiver. In endeavouring to preserve the health of others you will ensure your own; and when old age comes, it will not be as an evil to be cured, but as an ending which worthily crowns a life of labour—an ending which has been anticipated without repining, and will be endured without regret.

OBSERVATIONS
ON THE
PRACTICE OF THORACENTESIS IN SEROUS EFFUSION INTO THE PLEURA.

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AMONGST numerous questions arising in the extensive domain of medical practice, the subject of this paper is not the least difficult of solution. The well-being, nay the life, of a patient so affected is not seldom at stake; and the deliberate and mature judgment of his professional adviser is called for in deciding upon the most efficacious and prompt treatment to be adopted. Considerable discrepancy of opinion still exists as to the practice of chest puncture in these cases. When accepted as occasionally requisite, much uncertainty prevails as to the description of case in which an operation of the kind may be warranted, and as to the stage of pleural effusion in which favourable results may be expected.

Many eminent physicians, amongst whom the late Dr. Hope may be mentioned, assert that chronic pleurisy with effusion will usually yield to the administration of mercurials, iodine, diuretics, and local counter-irritation; and that when these fail, no benefit will arise from operative procedure. Moreover, objections have been raised on the grounds of the assumed dangerous results consequent thereon. The most prominent of these are—the occurrence of syncope; the risk of renewing or aggravating inflammation; and the pernicious effects of the ingress of air into the pleural sac.

On the other hand, there are not a few modern physicians, amongst whom Dr. Hamilton Roe, the late Dr. Hughes, and MM. Trousseau and Aran of Paris may be named, who advocate an early performance of paracentesis. They hold a strong opinion, based on their professional experience, with respect to the favourable effects of the prompt removal of effusion by this method. It is affirmed by Dr. Roe that the untoward accidents just referred to never occurred once in the cases (over twenty) thus treated; that pleuritic inflammation has for the most part subsided when considerable effusion has taken place; and that renewal of the effusion subsequent to operation may be prevented by mild constitutional remedies, which will also remove any traces of the primary affection. It is also forcibly inculcated that to withdraw the superincumbent effusion by early operation will remove a source of functional disturbance, and will speedily enable the lung to regain its normal volume and functional activity. With respect to the alleged injurious effects of the admission of air into the thoracic cavity by creating irritation in the pleura, with formation of pus or fresh exudations of lymph, such results have not been witnessed in the cases published by Dr. Roe, and successfully treated by operation. It is moreover argued, that to try and promote absorption when this process is slow in appearing, is but to lose invaluable time, and permit of irremediable damage being done to both lung and pleura, and that the means used with this object are calculated to further debilitate the system, already reduced by disease and by the remedies resorted to, a repetition of which is as tedious in the removal as they have been powerless in the prevention of effusion. Dr. Hamilton Roe has further pointed out that the rapid effusion occasionally occurring in these cases may jeopardize the life of the patient if it be not removed by some more expeditious means than those commonly resorted to, and that an operation deferred till the strength of the patient be reduced by the disease and by depressant drugs cannot reasonably be expected to prove as successful as if performed at an early period, whilst the absorbents retain their activity and the lung its expansibility. Much depends upon accurately seizing that stage in a case where the use of drugs should be replaced by tapping. Acute symptoms, if at all present, having subsided, and a physical exploration having determined the suppression of the respiratory movement in the implicated lung, no time should be lost in removing the effusion by paracentesis. Complete restoration of respiratory function must not be looked for if the operation be delayed beyond *five or six weeks* from the commencement of the attack. *Three weeks* have been assigned as the period when it may be resorted to with the most perfect success; blistering, dry cupping, with the use of tonics (of which the tincture of the sesquichloride of iron is one of the best) and nutritious diet completing the cure. Hazardous and inefficacious medication, having, in the first instance, been discarded for the more prompt remedy, may subsequently prove beneficial and curative.

It cannot be denied that many cases of acute pleuritis, with effusion, yield to suitable medical treatment, or that tapping the chest will prove merely palliative in passive effusion consecutive to chronic structural disease. Still, instances do occur of subacute or latent pleuritic effusion attacking delicate subjects, in which the speedy and beneficial effects by tapping contrast most favourably with the often nugatory and mostly tedious effects of medicinal agents.

Having briefly stated the views of those who advocate the operation, I shall first glance at the characteristic states in which it seems most appropriate, and then proceed to give a few cases lately coming under my notice, which will serve to illustrate the chief points above referred to.

In the first group of cases there is slight fever, with feeling of languor and indisposition, but little local uneasiness. The symptoms are obscure and unperceived by the patient, whose usual habits may be little interfered with. I have lately heard the case related of a gentleman visiting Paris, who complained one day to a physician with whom he was acquainted

of feeling slightly indisposed. The physician casually percussed his chest, and detecting the presence of fluid, at once proceeded to remove it by puncture, with speedy relief to his patient, who subsequently did well.

In another class of cases, the usual symptoms and signs occur, the most menacing arising from the rapid accumulation of fluid in the pleural sac. Dr. Copland, in his "Medical Dictionary," remarks: "It is not unusual to observe an abundant and rapidly increasing effusion, occasioning great distress, and even threatening the dissolution of the patient, by its pressure on, and displacement of, the lungs, heart, and large vessels, notwithstanding the judicious recourse to internal and external means. When this result is met with, more especially in very delicate or scrofulous persons, or in asthenic or latent states of the disease,.....no further time should be lost before recourse be had to paracentesis thoracis. It is obvious that as soon as the medical treatment proves inefficacious, the operation should be resorted to, for delay will diminish the chances of success from its performance.....It is most important that the operation should be performed before either the vital powers of the patient are too much reduced, or the thoracic viscera have undergone serious organic lesions.....If, however, the operation be delayed until the lung has become atrophied, condensed, or bound down by adhesions,.....a space must necessarily intervene between the surfaces of the pleura, and either the fluid is prevented being drawn off during operation, or it is replaced by atmospheric air, which occasions often an offensive renewal of the effusion and the aggravation of local and constitutional symptoms, exhausting, and ultimately destroying, the patient. These consequences sufficiently show the propriety of an early recourse to operation; but they are not satisfactory reasons for the neglect of it altogether, as urged by those who object to its performance." Again: "It is better that the operation be performed too soon than that this risk (irremediable visceral change) should be incurred by delay."

CASE 1.—Dominick C——, aged twenty-three, labourer, single, admitted December 2nd into the Chester General Infirmary. His previous health was good; habits temperate; had fever ten years ago, but got quite well. His present illness began, nine days previous to being visited by the house-surgeon, with shortness of breath and stitches in the right side. Says he took cold from leaving off some warm clothing. His appearance is healthy; complexion florid, but dusky; feels weak; sometimes has sensations of cold; occasional shivering; often hot and restless; skin warm and moist; mouth dry; tongue loaded; appetite impaired; slight nausea; bowels confined two days; urine scanty and high-coloured; dry, short cough; very little expectoration; respiration oppressed, 30 per minute; pulse 90, full and strong; pain in right side of the chest; decubitus towards the affected side; right side larger in size than left by one inch; *bulging under right clavicle:* defective expansion, and absence of vibration over the right side; apex of heart beats between the sixth and seventh intercostal space, a little to the left of left nipple; complete dulness on percussion over the right side of the chest, extending from the clavicle to the floor of the thoracic cavity, and from the mediastinum to the spine. By auscultation ægophony is heard towards the root of the lung, near the spinal column. To have a blister, six inches by six, applied to the right side. Ordered nitrate of potash, two drachms; tincture of digitalis, one drachm; tincture of squill, three drachms; camphor mixture, eight ounces; one ounce to be taken three times a day. Submuriate of mercury, two grains; powdered opium, quarter of a grain: make into a pill, to be taken night and morning. Aperient draught in the morning. Low diet.

Dec. 4th.—Occasional cough and expectoration; tongue furred; pulse 80, soft; pain at sternum shooting through to spine. On right side dulness receding; vocal resonance extending. On left side slight sibilant râles and puerile respiration. Measurement of chest, thirty-four inches; right side, eighteen inches. Repeat mixture, and add two drachms of compound tincture of camphor. Continue the pill, and apply to the blistered surface savine ointment.

5th.—Decubitus on back; countenance not so dusky; sternal pain subsided; expectoration loose; blistered surface discharging freely; less prominence of right infra clavicular region; slight vibration perceptible on the same side; tubular breathing distant, with slight coarse crepitation; posteriorly extensive dulness, with diffused ægophony. On left side clear sound on percussion, and puerile respiration; a little sibillation posteriorly on the same side; action of the heart normal; tongue slightly furred, and red at the edges; pulse 90, small, but compressible; respiration 30 per minute; urine high-coloured and copious. Ordered, chloride of mercury, twenty-four grains; powder of digitalis, six grains; sufficient of conserve of roses to make twelve pills; one three times a day. Acetate of potash, two drachms; tincture of squills, two drachms; spirit of nitrous ether, two drachms; compound tincture of camphor, two drachms; water, six ounces: half an ounce three times a day. Beef-tea and milk-gruel.

7th.—Pulse 80; cough and expectoration increased; no pain in chest.

8th.—Improving; less cough; breathing easier; normal breath sound intermixed with bronchial breathing, audible over the right infra-clavicular and mammary regions; urine copious, still high-coloured; bowels regular; breath fetid. Half a drachm of iodide of potassium to be added to the mixture; and a pill to be taken every night.

10th.—Improving in all respects; mouth sore. Omit pills.

12th.—Right side still much less movable than left during respiration; infra-clavicular bulging subsided; slight vocal resonance and fremitus along front of chest, advancing outward from mediastinum; feeble breath sound with slight occasional moist râle; distant infra-axillary respiratory murmur; ditto posteriorly near spinal column. Left side expands freely; respiration and vocal sounds normal; bowels open; tongue clean; urine still high-coloured. Ordered, iodide of potassium, twenty-four grains; bicarbonate of potass, one drachm and a half; tincture of digitalis, two drachms; spirit of nitrous ether, half an ounce; water, eight ounces: one ounce to be taken three times a day.

14th.—Marked prominence still perceptible laterally and posteriorly on the right side, with imperfect mobility of parietes. Distant bronchial breathing audible under the clavicle, and to a less extent over the mammary lateral and posterior thoracic regions, with slight moist râle. Patient up and about for some days, looking well, and with good appetite. Slight cough and expectoration; tongue clean; bowels regular; urine still high-coloured; skin cool; pulse 70, and soft.

15th.—There is still augmented expansion of left thoracic region, with puerile respiration and slight sonorous râle. Continue mixture, with half an ounce of compound spirit of juniper instead of spirit of nitrous ether.

16th.—Much the same as on last report; but complains of pain in the right side. Tincture of iodine to be applied to the right side; continue mixture.

18th.—Pain in right side, especially on taking a deep breath; cough and sputa now nearly ceased; tongue still slightly loaded; bowels open daily; pulse 80, small and weak; sleep broken. Right side, anteriorly, one inch smaller than left; respiration feeble.

20th.—Feels constriction in right side; pain during micturition.

25th.—Doing well, except from feeling of obstruction and oppression in his breathing.

29th.—Difficulty in breathing still complained of.

30th.—The operation of paracentesis thoracis performed. A valvular incision, an inch and a half long, was made through the integuments between the fifth and sixth ribs behind their middle; then the trocar was thrust quickly into the pleural sac, and twenty ounces of serum withdrawn, with marked relief to the breathing. Puncture closed by a pad of lint, strapping, and bandage. Slept much during the same day. Low diet.

31st.—Passed a restless night. Tongue furred; very thirsty; appetite bad; pulse feeble and soft, 72; bowels moved this morning; fremitus distinctly felt over right side, with increased respiratory murmur and vocal resonance, and dulness on percussion confined to the posterior margin of right chest; no pain or uneasiness over site of operation.

Jan. 1st.—Reports that he slept well from opiate draught (Battley's solution, twenty minims); perspired much before sleeping; pulse soft; respiration 22 per minute; tongue still slightly furred; urine high-coloured, copious deposit of lithates; thirst abated. Right side still not so expansible and resonant as left, but greatly improved since operation. Respiration feeble; vocal resonance perceptible; no cough or pain on deep inspiration. He says that his breathing is now as free as before his illness. Ordered, mixture of acetate of ammonia, with tincture of squill, spirit of nitrous ether, and camphor mixture; middle diet, with two pints of beef-tea daily.

3rd.—Bowels confined; tongue cleaning; pulse 65, soft and rather weak; urine still turbid and high-coloured; appetite better.—P.S. Marginal dulness still present inferiorly, but diminishing. Respiratory murmur perceptible, but feeble, and intermixed with slight muco-crepitant râle in the mammary region on deep inspiration. Expansion of parietes of right side of the chest improving. Two compound colocynth and henbane pills at bedtime.

4th.—Loud bronchophony heard in the right mammary region; lower down, the vocal resonance is heard as if through a layer of fluid, but not tremulous. Slight cough; no sputa or dyspnœa. Slept well; pulse 65, feeble; tongue cleaning: bowels opened; urine still high-coloured. Incision nearly closed by adhesion. Ordered a mixture with decoction of cinchona and alkaline carbonate, &c.

6th.—Improving in all respects. Slight cough and sputa; inferior dulness on percussion further diminishing and shifting its site on change of posture. Ordered, tincture of sesquichloride of iron, one drachm; compound camphor tincture, two drachms; spirit of nitrous ether, two drachms; water, six ounces: half an ounce three times a day. Full diet, with half a pint of stout daily.

7th.—Made a full examination this morning. Resonance on percussion still imperfect over the right side of chest; bronchophony less pronounced and more approaching the natural vocal character. The man feels well, and has a good appetite; urine clear and free; no cough or local uneasiness.

This case affords an unusually striking instance of the effects of pleuritis unchecked by medical art. The man, a healthy young labourer, allowed the disease to take its natural course for nearly ten days before seeking medical aid. Nevertheless, active treatment speedily relieved his most urgent symptoms, and allowed of an accurate estimate being made of the process and rate of the removal of the effusion. I resolved to give constitutional means a fair and sufficient trial in the first instance. It became manifest, however, that this treatment was unequal to cope with the fluid accumulation still left, and which, if unremoved, would be attended with a tedious convalescence, if not productive of the consequences above referred to. Every circumstance arising in the course of this case has been given without reserve, together with full details, from which a just conclusion may be drawn, in this instance, respecting the curative or nugatory effects of the operation. The young man said he felt little or no pain, and that he experienced immediate relief in his breathing. No faintness whatever occurred at this or any previous stage of the case. A few cubic inches, perhaps, of air gained admission to the pleural sac, most probably from the lung being unable, after the five weeks' compression, to expand at once *pari passu* with the subsiding effusion. There was, however, no evidence of any injury sustained, the small amount of air present being subsequently absorbed. Slight sympathetic fever supervened for a few days, but very quickly disappeared under the use of saline diaphoretics, low diet, and confinement to bed. The loaded urine indicated the disintegration and excretion of the inflammatory products in and upon the lung and pleura, which were now more favourably circumstanced for casting off adventitious matter. The physical signs gave most clear indications of the state of the lung prior and subsequent to the removal of the fluid effusion. A certain amount of condensation, if not inflammatory consolidation, was apparent, which will require time and constitutional remedies for its removal. The partial approach of the lung to the thoracic parietes indicated defective power of expansibility, which a more speedy resort to paracentesis might have obviated and rendered complete. Bronchophony, feeble respiratory murmur, and fremitus, marked the condition of the lung-tissue, and its contact with the walls of the chest; as the occasional coarse crepitation (*crepitans redux*) did the restorative efforts set up. The respiratory muscles seemed speedily to acquire contractile power, so long in abeyance; the play of the parietes of the right side now nearly approximating in activity to that of the left. The residuary serous fluid drawn off was nearly as thick as syrup, and disengaged, on cooling, a dense fibrinous coagulum; the organization of which, if unremoved, would most likely have been productive of the injurious limitations and other ill effects above referred to. The small incision made in removing the fluid quickly healed up, and did not give rise to any uneasiness or trouble. It may be safely affirmed that the patient's condition was advanced several months towards recovery in this short time; and that the inconvenient and often formidable results of the tedious and partial removal of fluid by absorption were avoided. Contraction and sinking-in of the thoracic parietes plainly denoted the injurious effects of a long-deferred operation; the lung having in great part lost its expansibility and power of reoccupying the space left vacant after removal of the effusion. I have met with many such cases, the consequence of unsubdued pleuritic attacks attended with effusion, the slow organization or absorption of which results in deformity, more or less marked, to the walls of the chest, with corresponding impairment to the respiratory functions and general health.

I shall next give the brief details of an advanced case of pleural effusion which came under my notice when connected with the Royal Infirmary for Diseases of the Chest, London.

CASE 2.—A middle-aged, married woman had had an attack of pleuritis, which received ordinary treatment. Indications of pleural effusion, with cough, expectoration, and general debility ensued. She informed me that she had consulted one or two physicians of eminence, but with no improvement in her state of health. I did not learn whether the case had been clearly made out; at all events, no mention of any operation had been suggested to her. I found the poor woman suffering from the effects of extensive effusion into the left pleura: shortness of breath, amounting ultimately to orthopnœa; decubitus on the left side; slight cough and expectoration; lividity of countenance; weak and rapid pulse; occasional palpitation; with loss of appetite, flesh, and strength. The physical signs were characteristic: total dulness on percussion over the left side of the chest, reaching from the clavicle to the sixth or seventh costal cartilages and ribs, and with a corresponding extension laterally and posteriorly. There was but little expansion of the left chest during respiration, and with little intercostal bulging or distension. Vibration and vocal resonance were entirely absent.* The dulness on percussion extended considerably beyond the mediastinum, and quite to the sternal notch. The heart was felt beating to the right of the sternum, being evidently much displaced. Breath-sounds and resonance were limited to little over half the right side of the chest, accompanied by sibilant râles and crepitation. The right thoracic parietes were seen struggling to carry on the respiratory movements in conjunction with the diaphragm and abdominal muscles.

This case was evidently too far advanced for tapping. Palliative treatment was alone indicated and used for the relief of the most distressing symptoms. Death soon put an end to the poor patient's sufferings, which, I may remark, were aggravated by and more directly dependent upon congestive bronchitis set up in the overtasked and crippled right lung and bronchial tubes.

The autopsy was quite confirmative of the symptoms and signs observed during life. Nearly an ordinary pail-full of clear, yellow fluid occupied the left pleural sac. Dense false membranes and fibrous layers covered and compressed the lung, which was atrophied, and lay almost unobserved against the spinal column. The mediastinum was pushed considerably over towards the right of the sternum. The right lung was highly congested, and evidently intruded upon by the effusion in the opposite side of the chest. The heart was dislocated (considerably to the right of the sternum), slightly enlarged, but otherwise unaltered.

Here was a case in which there can be little doubt that removal of the effusion at an early period would have proved beneficial, if not curative, especially as the patient did not seem originally cachectic, or wanting in power of resistance to the fearful train of symptoms she had to contend against.

The pathological changes disclosed at the autopsy afforded a well marked instance of the destructive effects upon the thoracic viscera of a prolonged pressure from the fluid effusion. As the lung was totally unfitted for free expansion, either renewed effusion or the ingress of air must have resulted from an operation performed at this ultimate stage of the case.

There are no cases of acute pleuritis in which thoracentesis is more urgently required than those in which rapid and great effusion occasionally ensues and threatens speedy suffocation, unless relief be quickly afforded. Again, the operation is called for in cases of pleuritis, with effusion, occurring in young children, in whom alarming symptoms quickly arise, who are less able to resist the effects of the disease than adults, and who express their feelings with difficulty. I have had no experience of such cases, but believe that attention may be profitably directed to them in connexion with the practice recommended.

When recently visiting the Dublin hospitals, I had an opportunity of seeing two cases in which thoracentesis was performed. The first case, under the care of Dr. Kirkpatrick at the Richmond Workhouse, was that of an old man affected with effusion into the left pleura. He had been ill for some time, and was, I believe, the subject of chronic disease, upon which a pleuritic attack supervened. The operation was performed with facility, and much relief to his symptoms. The second case was that of an intelligent lad, alternately under the care of

* I may here incidentally mention, as bearing upon the diagnosis of such cases, that M. Landouzy, of Rheims, has satisfied himself that ægophony arises from condensation of the lung consequent upon the compression exerted by the effusion of fluid, which has no further connexion with its production. The sound persists if the lung is prevented from expansion by unyielding false membrane.

Drs. M'Dowel and Banks at Sir Patrick Dun's and the Whitworth Hospitals, and who was the subject of pleuritis, with effusion on the right side of the chest. In this case the fluid was more than once removed by paracentesis with marked benefit on each occasion. The lad begged of Dr. Banks to repeat the operation, having experienced so much relief to his symptoms when first performed, with improvement to his appetite and general condition. When the fluid re-accumulated, his breath became greatly oppressed; his face dusky, with impending asphyxia; his appetite failing, and his nights restless. All distressing symptoms in great part disappeared on the repetition of tapping. It was gratifying to see this poor lad, after one such operation, sitting up in bed, enjoying his dish of mutton broth, and looking so cheerful and free from pain. I have not learned the upshot of these cases; but, even if fatal, there was undoubted evidence of marked relief to urgent symptoms, quite sufficient to warrant paracentesis.

Now a few remarks in conclusion as to the operation and its performance. Those who practise and recommend it affirm that it is free from risk, and almost painless. We can readily admit that little or no ill effects are likely to follow from the mere penetration of a cavity lined with serous membrane now that ovariotomy has proved comparatively successful and free from danger. The chief point to be observed in ensuring favourable results from paracentesis seems to be the speedy closure of the aperture without waiting for the removal of all the effusion, any recurring fluid being soon absorbed. Repeated tapping is to be preferred to allowing the fluid to drain from an unclosed aperture, or through a tube left *in situ*. These latter methods will, in some respect, account for the indifferent results of operation in some hands. The spot selected for puncture must, of course, depend upon the site of effusion, a complete absence being ascertained on auscultation and percussion of all signs indicating proximity of the lung in the part fixed upon for puncture. The upper edge of the sixth rib posterior to the digitation of the serratus major is the part usually chosen. The integuments and intercostal muscular fibres being incised and drawn a little downwards, a small slender trocar should be *quickly* thrust upwards and inwards through the pleural sac. The pleural membrane is sometimes pushed before the point of the trocar through the want of a little expert manipulation. It will be advisable to use previously an exploratory needle where any doubt exists as to the presence or character of the fluid in the pleural sac, purulent effusion usually requiring the most prompt operative treatment. Pressure should be made on the abdominal and thoracic parietes on the side affected, so as to promote the removal of as much fluid as possible.

There have been various contrivances recommended with a view to the exclusion of air, which, however, I believe has been charged with more hurtful effects than may be properly assigned to it. The exclusion of air may be ensured by attaching to the canula a little gut, or other thin membrane, which acts as a valve on the removal of the trocar, and prevents the ingress of air on the patient's coughing, or on the cessation of the flow of fluid. The same object is secured by closing the orifice of the canula with the index finger whilst the lung is being gradually expanded by the ingress of air through the natural channel. A stream of serum will subsequently flow without the back current of air. The whole or chief part of the effusion having been removed, the canula is withdrawn, and the edges of the wound brought together with adhesive plaster. A few turns of bandage rolled round the chest will prove useful and agreeable to the patient. The operation thus performed gives little pain, is simple, and is, I believe, divested of any injurious consequences.

Chester, 1862.

ON THE

EMPLOYMENT OF GLYCERINE IN THE TREATMENT OF DISEASES OF THE EYE.

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NOTWITHSTANDING the fact that glycerine is largely used as a bland, emollient application to the skin in several affections of that delicate membrane, its importance as a remedial agent in certain diseases of the conjunctiva appears to be considerably underrated, although several marked points of analogy exist between the two structures.

Having been induced some time since by the perusal of a paper published in the *Bulletin de Thérapeutique* by M. Foucher upon this subject, I have given a fair trial to the topical employment of glycerine, both uncombined and as a substitute for water in the preparation of collyria; and the results have been such as to warrant me in recommending its use in some of the forms of ophthalmia, and other superficial affections of the eye.

The application of *pure* glycerine, uncombined, is decidedly advantageous for the prevention and removal of the hard crusts produced by irritation which are occasionally closely adherent to the eyelids in ophthalmia, which disorder they consequently tend to perpetuate.

In ectropion, and in cases of partial loss of the eyelashes, glycerine forms an agreeable and efficient application; and it will also be found similarly useful in epiphora, and in any other superficial diseases of the eye which are dependent upon diminished secretion by the Meibomian glands. Amongst these may be especially mentioned the peculiar condition of the conjunctiva to which Von Ammon gave the name of Xerosis Conjunctivæ, in reference to the dry, cuticular appearance of the eyeball, and which is most commonly met with in persons of scrofulous diathesis who have long suffered from chronic ophthalmia. The free play of the eyelids upon the front surface of the eyeball is preserved by the topical employment of the glycerine; and the tendency to symblepharon, or to an uncomfortable temporary adhesion of the eyelids, which occurs after sleep, is counteracted.

Unctuous applications are always preferable to watery solutions in ophthalmia, both because they are not so readily washed away by the tears, and because they more closely resemble the natural greasy secretion of the Meibomian glands, by which the conjunctival surface is lubricated in the healthy state; and the circumstance that glycerine alone, when employed locally, is highly beneficial in the ophthalmic affections already referred to, also points to that substance as a valuable vehicle in the preparation of collyria.

M. Foucher enumerates, in his paper in the *Bulletin de Thérapeutique*, a long list of medicaments with which he has combined glycerine in the treatment of ophthalmia in numerous cases which had come under his care at the Hôpital des Enfants. The substances which I have found to be most usefully employed in this form are the sulphate of zinc, the sulphate of copper, and laudanum; but M. Foucher also combines glycerine with the perchloride of iron, with borax, with tincture of iodine, and other agents.

It should be here stated that nitrate of silver, owing to the chemical action which ensues upon its coming in contact with organic matter, cannot be used conjointly with glycerine; and it further remains to be mentioned that the glycerine should be well purified, in which condition it is perfectly neutral, does not possess any odour or taste, and does not produce irritation when it is applied to the eye.

Doughty-street, October, 1862.

A Mirror

OF THE PRACTICE OF

MEDICINE AND SURGERY

IN THE

HOSPITALS OF LONDON.

Nulla est alia pro certo noscendi via, nisi quam plurimas et morborum e dissectionum historias, tam aliorum proprias, collectas habere et inter se comparare.—MORGAGNI. *De Sed. et Caus. Morb.*, lib. 14. Proœmium.

KING'S COLLEGE HOSPITAL.

STONE IN THE FEMALE BLADDER; EXTRACTION THROUGH THE VAGINA; FORMATION OF A FISTULA.

(Under the care of Mr. FERGUSSON.)

IN our reports of last week, we recorded an instance in which a stone was removed from the female bladder through the vagina by Mr. James Lane, at St. Mary's Hospital, the wound being at once closed by sutures, with results that required some successive operations to effect a cure. We place another instance

of the kind on record, in which the result was not so satisfactory, for dribbling of urine still remains up to the present time, though this no doubt will be rectified on some future occasion. The details are full of suggestive value.

We likewise add the particulars of two other cases (making three in all) in which females were the subjects of stone in the bladder. For the notes of all these instances we are indebted to Mr. Wm. Fairlie Clarke, house-surgeon to the hospital.

Fanny B——, aged nine years and a half, was admitted on the 22nd of March, 1862. About the beginning of August last she began to pass her urine with great frequency—twenty or thirty times a day; she also suffered acute pain both before and after micturition. Sometimes she passed a little blood with her urine. At the same time her bowels were much relaxed, accompanied by straining and tenesmus on going to stool. From that time to the present her symptoms have gone on increasing.

On admission, she was examined whilst under the influence of chloroform, and a large stone, apparently lying free in the bladder, was detected. On the 5th of April, chloroform having been given, Mr. Fergusson, after sounding for the stone, and discovering its position, passed a straight-grooved staff into the bladder; and having turned the groove downwards towards the vagina, he gave it to an assistant to hold; then, dilating the vagina with the finger of the left hand, he introduced the point of a scalpel into the groove of the staff, immediately behind the neck of the bladder, and slit open its wall to the extent of three quarters of an inch. This allowed the forefinger of the left hand to be introduced without difficulty, the staff at the same time being withdrawn. A small pair of forceps was then passed along the finger, and the stone was seized. In withdrawing the forceps, a little delay occurred owing to the stone being larger than the wound. This difficulty, however, was overcome by rotating the forceps, and causing the expanded blades to dilate the opening gradually.

In the course of some remarks made after the operation, Mr. Fergusson observed that, in an irritable child like the present, the risks of lithotrity would have been great. He had here resorted to an operation practised by modern surgeons. He believed that the bladder had been cut into through the vagina before. The evil anticipated from this proceeding was the occurrence of a fistula, but now surgeons have come to the conclusion that these fistulæ can be certainly cured by operation. He had been influenced in the present instance by what has fallen from Mr. Baker Brown, who has said that the stone could be readily removed behind the urethra, and at a future time, if a fistula remained, a stitch or two could be put in to close it. He (Mr. Fergusson) had not had an opportunity of testing this, as cases are rare. In the present case the difficulties were great, because the vagina was so small, which presented an obstacle to putting in ligatures. He had made an incision into the bladder on an ordinary straight director, and readily extracted a mulberry calculus the size of a walnut; indeed it was a well-marked example of it. In a case of this kind he thought there was more probability of the wound closing, as there was no loss of tissue.

The stone, which was of the "mulberry" kind, having been extracted, Mr. Fergusson brought together the edges of the wound by a silver suture. On the following day this stitch was removed. A few days after the operation a decided improvement was noticed in the girl's general health and appearance; but she was quite unable to retain her urine, it dribbling away constantly without her being aware of it.

For four months she remained in the hospital after the operation, but unfortunately she gained no power of holding her urine, the wound remaining so large that the point of the forefinger could be easily passed through it, and with every care and attention it was impossible to prevent her skin becoming irritated by the constant contact of the urine. Her general health improved under the influence of a tonic treatment, and in August she was sent to the country. The last time she was heard of, which was about the middle of September, she was reported to be in excellent health, but still quite unable to hold her urine.

STONE IN THE FEMALE BLADDER; EXTRACTION BY DIVISION OF THE URETHRA AND DILATATION OF THE NECK OF THE BLADDER; RECOVERY WITH STILLICIDIUM URINÆ.

(Under the care of Mr. FERGUSSON.)

Catherine R——, aged twenty-one, admitted April 16th, 1862. She is a delicate-looking young woman, with fair complexion, living at Nayland, a place on the borders of Essex and Suffolk. She appears to belong to a healthy family, and never to have had any serious illness herself. About four or five years ago she began to suffer pain after passing urine, which has gone on increasing in severity up to the present time, and has been coupled with frequent and sudden micturition, so urgent sometimes that she is unable to hold her urine for a minute. Latterly her rest has been a good deal disturbed, and her appetite and general health have declined. On the 17th, Mr. Fergusson sounded her, and detected a rather large stone with a somewhat rough surface.

On the 26th, the patient was placed under chloroform, and Mr. Fergusson having introduced a lithotrite and laid hold of the stone, made several attempts to crush it, but without success, owing to its extreme hardness. He then passed a director into the bladder, and slit up the urethra upon it with a blunt-pointed bistoury in a direction downwards and outwards. He then dilated the neck of the bladder with the forefinger of the left hand, and was thus enabled to remove with lithotomy forceps an oxalate of lime calculus about the size of a walnut.

30th.—The pain has been considerably relieved since the operation, the urine passing away spontaneously. She has power of holding her urine for two or three minutes at a time, but the effort of doing so is accompanied with pain.

Early in May she was put upon the muriated tincture of iron, and ordered a cold bath every morning. This plan did her some good, and enabled her to retain her urine for fifteen or twenty minutes at a time. She continued in this state until the middle of July, when she was discharged, in the hope that the country air might restore her. When last heard of, which was about the end of August, she was no better than at the time of her leaving the hospital.

STONE IN THE BLADDER OF A FEMALE CHILD, SUCCESSFULLY REMOVED BY LITHOTRITY; CLINICAL REMARKS.

(Under the care of Mr. FERGUSSON.)

Martha Jane B——, aged five years, admitted July 10th, 1862. Lives at Paddington. She is a delicate child. About two years ago her mother noticed that she strained in passing her urine, and that sometimes it came from her involuntarily. At the same time she was suffering from prolapsus ani. These symptoms continued for a year without getting much worse; at the end of that time they began to increase in severity, and there was great pain and irritation at the orifice of the urethra.

When she was admitted into the hospital a small stone was easily detected.

On the 19th of July she was placed under chloroform, when Mr. Fergusson performed lithotrity, and removed several fragments of a stone, which consisted of uric acid. A small spoon-shaped scoop was found useful in extracting some of the pieces.

July 23rd.—Several fragments have come away since the operation, and the various symptoms are much relieved.

Aug. 2nd.—To-day Mr. Fergusson removed another large piece of stone by the aid of the lithotrite, which piece was apparently the last.

18th.—She has had no symptom of any stone in the bladder being left. The general health is much improved, she suffers no pain, and has no difficulty in holding her urine. She left the hospital perfectly well.

This case has been the subject of clinical remarks by Mr. Fergusson on several occasions. He stated that it possessed more than ordinary interest; indeed, it was full of interest in a surgical point of view, for various reasons. This made the third case of stone in the female bladder which had come under his notice during the past summer in the hospital. In the first, he had cut into the bladder through the vagina and back part of the urethra. The patient had had dribbling of urine ever since, which he considered one of the objections to this mode of operation. In the second instance, he tried in vain to crush a mulberry stone, for it was so hard that the instrument actually bent, and he despaired of breaking it in this patient, who was an adult female; he therefore resorted to an operation he had before frequently found successful,—namely, making an incision into the urethra, dilating the neck of the bladder, and then extracting the stone without difficulty. In that case, also, there was some trouble in holding the urine. In the third case, he resolved to crush the stone, and extract it partly by the scoop and partly by the lithotrite; and this had been quite successful, for the child was effectually cured. Mr. Fergusson likewise referred to several cases of female children with stone that had occurred to him in private practice, in all of whom lithotrity had proved successful, and he was enabled to bring away all the fragments at the first crushing.

GUY'S HOSPITAL.

WOUND OF THE CHEST BELOW THE RIGHT SHOULDER-BLADE FROM A KNIFE, INVOLVING THE LUNG, DIAPHRAGM, AND LIVER; DEATH FROM PULMONARY HÆMORRHAGE.

(Under the care of Mr. POLAND.)

THE post-mortem details in the following case, which we have taken from the notes of Dr. Wilks, will be found to possess considerable interest, and fully explain the nature of the wound inflicted.

James M——, aged thirty-one, was admitted into Cornelius ward on the 9th July, 1862, about one or two o'clock, and died at a quarter to ten P.M., living about seven hours. In a quarrel with his "mistress," the latter stabbed him in the back, below the right shoulder-blade. It was said that much bleeding occurred, and he was very soon brought to the hospital. A sharp cut wound, nearly an inch long, was found just below the angle of the right scapula, and penetrating the chest between the eighth and ninth ribs. It soon became evident that hæmorrhage was going on within the chest. As the difficulty of breathing became greater, the respiratory murmur diminished, and dulness on percussion was found to be increasing. At last the chest became universally dull, and respiration was quite lost. The pulse failed, and the skin blanched. There was not the slightest hæmoptysis, and therefore it was conjectured that the intercostal artery might be injured, rather than the lung. There was, however, slight emphysema around the wound.

Autopsy seventeen hours after death.—On opening the chest, the right side was found full of blood—a mixture of coagulum and serum,—and amounting in quantity to several pints. On removing this, the lung was seen to be collapsed and pressed against the spine, except where adhesions had occurred at the apex and also at the base; the latter being universally adherent to the diaphragm by loose cellular tissue. About an inch above the inferior border of the lung, on its outer and posterior aspect, was seen a clean incision, which in the collapsed organ was not more than half an inch long, though much longer when the lung was stretched. On passing the finger into this wound it penetrated the lung to its base, and then through the diaphragm into the liver. The wound at the base of the lung could only be seen by tearing away the adhesions which held it to the diaphragm, when effusion of blood was seen to have occurred in the cellular tissue at this part. Immediately below was the wound in the diaphragm, which was more than an inch long, and thus of greater length than the external wound. The wound in the liver corresponding to this presented a clean cut, and was nearly an inch and a half long, and an inch in depth. From these facts it was clear that the knife must have been moved after the thrust had been made. It was remarkable that no hæmorrhage into the abdomen had occurred from the wound in the liver; if there had been any bleeding, it must have taken place upwards into the chest through the diaphragm. The external wound did not correspond to the wound in the lung, being considerably lower; but this was accounted for by the fact of the lung being collapsed, whereas at the time of the injury it was inflated, and the chest probably in a state of full inspiration. The intercostal artery of the eighth rib was uninjured.

WESTMINSTER HOSPITAL.

CLINICAL REMARKS ON A CASE OF DIFFUSED ANEURISM OF THE POPLITEAL ARTERY; GANGRENE OF THE LIMB; AMPUTATION; DEATH FROM ERYSIPELAS.

(Under the care of Mr. HOLT.)

FOR the notes of the following case we are indebted to Mr. Caudell Clark, assistant house-surgeon to the hospital:—

Wm. P——, aged forty-two, was admitted on February 13th, 1862, with a tumour in the right ham. He is a lath-render by trade, in which employment he constantly uses the right leg, but had never suffered any inconvenience until the 10th of January, 1862, when, whilst walking in the street, he felt a sudden pain in the right leg by the side of the knee, which was not severe enough, however, to cause him to lay up. In a few days a swelling appeared on the inside of the knee, which was very painful, and throbbed. On the 20th of January he laid up, and was attended by a medical man, who considered him to be labouring under rheumatic gout, and treated him for three weeks, giving him medicine, and applying a linseed-meal poultice externally. He was afterwards seen by another practitioner, who applied a lotion to the tumour, and, imagining it to be an abscess, introduced a grooved needle, but no pus following the puncture, he fortunately did not make an incision.

On admission there was pulsation in the tumour, which filled the popliteal space, forming a projection to the inner side of the joint. There was great pain in the tumour and down the leg, which was œdematous and swollen, but not discoloured. Ice was placed over the tumour, and two of Signoroni's tourniquets were applied alternately at different parts of the femoral artery for a few hours at a time. It soon became evident, however, that the aneurism had become diffused, for the limb became more swollen and slightly discoloured, and the leg and foot became cold. Seeing that mortification of the limb was coming on, Mr. Holt proposed to amputate in the thigh, but the patient would not consent, and it was not till the 18th of February, when the limb had become of a dark colour, and the patient's strength was considerably reduced, that he consented to the operation. Mr. Holt amputated in the lower part of the thigh by antero-posterior flaps on the same day. The patient lost but little blood.

Examination of the limb.—The popliteal space was filled with clotted blood, which extended amongst the muscles of the neighbourhood, and between the fascia and superficial muscles of the calf down to the inner ankle. The popliteal artery was dilated, and with a large rent in it; and there can be no doubt that a small aneurism had formed in the first place, which subsequently burst, the blood finding its way into the tissues of the limb, and giving rise to the occurrence of gangrene. The fact that no blood followed the puncture with the grooved needle is, no doubt, explicable by the existence of large quantities of clotted blood, into which the needle passed, and therefore did not give rise to any hæmorrhage.

The patient appeared to rally somewhat after the operation, and passed a good night, being relieved from the severe pain from which he had previously suffered.

Feb. 21st.—The stump was dressed, and looked healthy; suppuration established.

23rd.—Patient making fair progress, though somewhat depressed by the profuse suppuration from the stump.

March 9th (nineteenth day).—The ligature upon the main artery came away; the greater part of the stump has healed, and the rest is granulating healthily.

26th.—Erysipelas appeared in the stump, and rapidly extended towards the trunk. In a few days the end of the bone protruded, and the tissues of the stump were in great part destroyed. Notwithstanding active treatment by stimulants, &c., the erysipelas invaded the penis and scrotum, stripping off the skin, and leaving unhealthy sloughing surfaces. The patient's strength rapidly gave way, and after lying in a semi-conscious state for some days he died on the 17th of April, just two months after the operation.

In some clinical remarks upon the foregoing case, Mr. Holt drew the attention of the pupils to the treatment necessary in a diffused aneurism, the result of disease of the vessel, contrasted with that of a case of traumatic aneurism, where the vessel is presumed to be healthy. He illustrated his observations by reference to a case which occurred about four years ago, under his care, in the hospital, where a large false aneurism had formed as the result of a red-hot iron having been thrust into the ham. In that case, Mr. Holt made a free incision into the aneurism, and having evacuated the clots, applied a ligature to each end of the popliteal artery, and the young man made a rapid recovery, with perfect use of the limb. In the present case a similar proceeding had been suggested; but taking into consideration the probably diseased state of the vessel, and the extensive swelling of the limb, Mr. Holt considered amputation the only proper treatment, and the condition of the limb exposed by subsequent dissection fully justified the conclusion.

We have had under our notice in the metropolitan hospitals, during the past few years, several cases of popliteal aneurism becoming diffused, and they have all required amputation eventually, although attempts have been made to save the limb in some cases. A few months back an hospital surgeon ligatured the femoral artery for an affection of this kind, but was compelled subsequently to amputate the limb.

METROPOLITAN FREE HOSPITAL.

HYDATID CYST IN THE LIVER; PUNCTURE AND EVACUATION; RECOVERY.

(Under the care of Mr. HUTCHINSON.)

MARY B——, an Irishwoman, aged thirty, was admitted Jan. 25th, 1861, for a large tumour in the abdomen. She was

fairly healthy-looking, had good colour, and until three or four months before admission had had good health, except that she had not menstruated for sixteen months; she had, however, "known of a lump in her side" for three or four years.

Jan. 25th.—There is a prominence in her abdomen on the right side, midway between the spine of the ilium and the edge of the ribs, almost the whole of which space is occupied by it. It is easily visible in this position as a rounded, tense swelling. Forwards, it extends as an irregularly rounded mass considerably to the left of the umbilicus, and about a hand's-breadth below its level. It extends backwards into the loin, where the only tympanitic note which can be elicited is just above the crest of the ilium. The left loin is tympanitic over its whole extent. It is crossed in several parts by shallow sulci, one of which, the broadest, passes directly upwards, about a hand's-breadth to the right of the umbilicus. Fluctuation is very distinctly perceptible in the more prominent part of the tumour, and is transmitted from it to its left boundary. The hand may be pressed under the tumour in the right iliac fossa, and the mass is to a certain extent movable. Below and around the tumour there is a tympanitic note. Above it, just over the lowest rib, there is a space in which an obscure tympanitic note is certainly elicited. The width of this space increases as we approach the epigastrium. The ribs are not in the least thrown off, the distension being abdominal, and not thoracic. The breadth of the hepatic dulness is much less than usual, and certainly none of it is below the level of the ribs. The patient states that her bowels have always been regular, and that she has had no difficulty with her urine.

On February 26th Mr. Hutchinson made a puncture into the tumour with a small trocar. From a pint to two pints of clear fluid were drawn off; it looked like water, but tasted of salt, was full of chlorides, but contained no albumen. The cyst was not emptied, probably not more than half; but the fluid ceased to run, and the canula was then withdrawn.

During the week following the puncture the patient was feverish, lost her appetite, and had some tenderness over the cyst. In the course of two or three days the cyst had regained almost its previous size.

On March 8th a further note of the case was made. The woman had not yet nearly regained her state of health previous to the tapping: her appetite was bad; there was a good deal of tenderness about the tumour, and it felt quite as large as it was before the operation; it was difficult to define its limits so accurately, owing to its being tympanitic over a considerable extent of its surface. When she lay on her back, the front of the tumour was tympanitic, and the right side dull; but on making her lie on the right side these conditions were reversed. It seemed therefore probable that the cyst contained a large amount of fluid and a considerable quantity of air. The woman was well enough to be up and about the ward.

After the last note the tumour slowly diminished. The woman left the hospital about two months after the tapping, and at that time the tumour had shrunk so that it could scarcely be found. Six months later she was again seen and examined, but the tumour could not be detected.

Remarks.—There can in this case be little doubt that the diagnosis of hydatid cyst was correct. The operation of puncture and partial evacuation was effective in destroying the entozoon, and in inducing inflammation and contraction of the cyst. Had it not been so, Mr. Hutchinson intended to have injected a solution of iodine. The inflammation of the cyst was at one time rather sharp, and caused considerable constitutional disturbance.

CHARING-CROSS HOSPITAL.

SYMPTOMS OF POISONING BY PHOSPHORUS AVERTED BY EARLY TREATMENT.

(Under the care of Dr. WILLSHIRE.)

VARIOUS preparations or mixtures containing phosphorus are sold for the purpose of destroying rats, mice, cockroaches, &c. One of these is a combination of flour, phosphorus, and sugar, and goes by the name of phosphorus paste. Some of this was eaten by a little boy, about five or six years old, on the 19th of August, and as it was quickly discovered by his parents, he was brought to the hospital by his father before any of the symptoms of poisoning had time to develop themselves. An emetic was at once administered by Mr. Travers, the house-surgeon, followed by some olive oil and carbonate of magnesia, and in a very short time he was quite well and free from danger. The precise quantity swallowed was not ascertained, but as this substance is known amongst the poor to be rapidly fatal to animal life, fears were entertained about the boy, which led to early application for treatment, and thus spared much suffering.

Medical Societies.

OBSTETRICAL SOCIETY OF LONDON.

WEDNESDAY, OCTOBER 1ST, 1862.

DR. TYLER SMITH, PRESIDENT, IN THE CHAIR.

DR. H. THORNTON and Dr. F. F. SUTTON were elected Fellows of the Society.

NOTES OF A CASE OF SPINA BIFIDA, FOLLOWED BY HYDROCEPHALUS.

BY D. RICHARDS, ESQ., BRIGHTON.

In this case the child (a female) was born with both legs doubled up to the shoulders, with spina bifida, angular curvature of the spine, cleft palate, and talipes varus of both feet. The birth took place on April 4th, 1860; and on May 2nd the left leg descended from its abnormal position, and a fortnight afterwards the right leg came down. From the time of birth the opening in the spinal canal began to close, the integument having been absent, as well as the spinous processes of the three lower dorsal vertebræ. As the opening diminished, however, the head gradually enlarged. Subsequently the aperture in the spine completely healed, and the size of the head somewhat diminished, but the child died from exhaustion on October 11th, 1860.

IMPERFORATE RECTUM; ATTEMPT AT RELIEF BY OPERATION; DEATH.

BY WILLIAM TILBURY FOX, M.D. LOND.,
UNIVERSITY MEDICAL SCHOLAR.

On June 5th the author was requested to take charge of the following case:—

William M——, aged four days, has passed nothing since birth per anum; apparently free from actual pain; exhausted; vomiting of offensive dirty fluid constant, nothing being retained in stomach; surface cold; flatus; passes urine; belly greatly distended, tympanitic, tender. On examination was found a small but normal-looking anus; a probe, however, passed about an eighth of an inch only into a cul-de sac. The most careful examination failed to detect anything like the impulse or feel of a distended rectum. A trocar (with its canula) was passed in the direction of the rectum for the distance of an inch and a half, and the trocar withdrawn. Nothing passed through the canula, which was then removed, and warm water injected along the course of the wound, which was subsequently dilated with a bougie. However, no fæcal matter was seen. The friends took time to consider the suggestion made to open the colon, and before the next visit the child died.

Post-mortem examination.—General peritonitis. Rectum terminated in cul-de-sac, about one inch from the anus, with which it was connected by cellular tissue, and its lower part was empty and flaccid; but above it was distended by fæces, and this condition fully explained the non-exit of fæces through the canula, although the trocar had entered the bowel exactly in the centre of its termination. Had any evidence of the presence of the rectum been forthcoming, the gut would have been found and brought down to the level of the anus.

The case shows an exceptional condition which may frustrate the detection of the gut when it terminates only a short distance from the anus, and is within easy reach—viz., the impaction of the upper part by fæces, and the consequent non-distension and emptiness of the lower part of the rectum. It moreover points out the desirability (and safety) of making an exploratory search with the trocar, and injecting fluid through the canula before, and not along the track of the wound after its withdrawal.

RUPTURED VAGINA DURING LABOUR; CHILD IN ABDOMEN THREE HOURS AND A HALF; PELVIC CELLULITIS; RECOVERY.

BY J. H. BELL, M.D., BRADFORD.

(*Communicated by* Dr. TANNER.)

The patient, aged twenty-eight, had previously had normal labours. The labour proceeded apparently naturally at first,

but there being cessation of pains for seven hours, ergot was given in two doses of half a drachm each, with half an hour's interval. Shortly after she felt "a tear, a burst, and a flow," and thought the child was born; there was a great discharge of blood. The head was found to have receded considerably, and the hand passed with it into the abdominal cavity. Dr. Bell first saw her three-quarters of an hour after the rupture; the child was in the abdomen, but the patient not suffering from collapse. The forceps were applied, but it was not found possible to deliver thus, and finally the child was turned and extracted. The rent was found to have occurred in the left antero-lateral reflection of the mucous membrane of the vagina, the os uteri being entire. The patient felt "nicely" after the completion of the operation and extraction of the placenta. Subsequently the patient passed safely through a critical illness, pelvic cellulitis having occurred. She was quite well at the end of two months.

ON THE USE OF MEDICATED PESSARIES IN THE TREATMENT OF UTERINE DISEASE.

BY T. H. TANNER, M.D.,
ASSISTANT-PHYSICIAN FOR THE DISEASES OF WOMEN TO KING'S COLLEGE HOSPITAL, ETC.

The great value of a variety of local applications in the treatment of uterine disease seems to be insufficiently appreciated by the profession at large. The chief reason, perhaps, for the non-employment of medicated pessaries has been the difficulty of so making them that they can be efficiently applied by the patient herself. This difficulty is overcome by the use of the butter obtained from the theobroma cacao nut, as a material for holding the drugs together, instead of wax and lard. Mr. White Cooper has shown the utility of this butter as a basis for ophthalmic ointments, and it will be found equally valuable for pessaries and suppositories. Though it has the consistence of wax while cold, yet it becomes liquid in a few minutes when introduced into the vagina. After alluding to the cases of uterine, ovarian, and bladder disease in which medicated pessaries are of great service, the communication ended with certain formulæ which the author was in the habit of prescribing. The following are examples:—

Mercurial ointment, four scruples; extract of belladonna, one scruple; cacao butter, four drachms; olive oil, one drachm. Mix; divide into four pessaries, and order one to be introduced into the vagina every night.

Iodide of potassium, one drachm; extract of conium, four scruples; cacao butter, four drachms; glycerine, one drachm. Mix; divide into four pessaries.

Boxes of these pessaries, prepared by Mr. Cooper, of 26, Oxford-street, were placed on the table for the inspection of the Fellows of the Society.

A SINGULAR CASE OF UNSUSPECTED PREGNANCY AND AWKWARD DELIVERY.

BY J. SHORTT, M.D.,
ZILLAH SURGEON, CHINGLEPUT, MADRAS.

The case was that of a lady aged forty, a European, who had had two children, the last nine years before. She had been at first actively treated by speculum and caustic as for inflammation of the womb, and had taken much medicine with the idea of removing what was considered to be a dropsy of the abdomen. The patient was in entire ignorance of her pregnant condition. The escape of a watery fluid for two days was considered as evidence of rupture of the ovarian cyst. At the end of the two days severe pains set in, for which she was directed to be placed in a warm hip-bath and opiates given. While in the hip-bath, however, delivery of a mature living child occurred, to the great surprise of the patient and her friends.

Reviews and Notices of Books.

The Correlation of Physical Forces. By W. R. GROVE, Q.C., M.A., V.P.R.S., &c. Fourth Edition. London: Longmans.

TWENTY years have now passed away since the author first promulgated the important doctrines which this well-known work contains. Is force ever destroyed or now ever created? asked Mr. Grove of himself. Never, was the reply. But force is often *apparently* lost. So what becomes of it? The *apparently* lost force has simply changed its character, was the answer. There is but one force—*motion*; all other forces are but modes of motion. We are lost in a metamorphosis of force! If one mode of motion be excited, straightway other—nay, sometimes all—varieties follow in its train.

"When a substance, such as sulphuret of antimony, is electrified, at the instant of electrization it becomes *magnetic* in directions at right angles to the lines of electric force; at the same time it becomes *heated* to an extent greater or less according to the intensity of the electric force. If this intensity be exalted to a certain point, the sulphuret becomes luminous, or *light* is produced; it expands, consequently *motion* is produced; and it is decomposed, therefore *chemical action* is produced."—p. 242.

That other forces than these may in the future be detected, differing as much from them as they differ from each other, is highly probable; but when discovered, and their modes of action fully traced out, they will be found, says Mr. Grove (p. 240), to be just so related *inter se* and to these forces as we know the latter are related to each other. In many cases it may be a difficult question to determine what constitutes a distinct variety of matter or mode of force; and even should we ever be led to dismiss the idea of various forces and regard them as the exertion of one force, still we could never, Mr. Grove argues, avoid the use of different conventional terms for the various modes of action of this one-pervading force. If the great doctrine we have thus hinted at be true—and now who doubts it?—it is evident that we cannot conceive of any change in one force without a change in other forces ensuing simultaneously:—

"A body cannot be heated without another being cooled, or some other force being exhausted in an equivalent ratio to the production of heat. A body cannot be positively electrified without some other body being negatively electrified," &c.

There is, therefore, such a necessary mutual or reciprocal dependence between forces as is inseparable even in mental conception. This is their *correlation*.

To demonstrate this interdependence of forces, and to prove their necessary reciprocal production, constitute the great argument of Mr. Grove's treatise. It is true that several scientific men have occasionally caught a glimpse of the truth here involved. As far back as 1839, M. Séguin affirmed the identity of heat and mechanical force, and gave a calculation of their equivalent relation not far different from the more recent numerical results of Mayer and Joule. But, without doubt, to Mr. Grove the credit is due of having been the first to introduce the subject as a generalized system of science, and of continuing to enforce it in lectures and writings for many years, during which it met with that kind of opposition which is usually bestowed upon novel ideas. To consider Mr. Grove, therefore, as the historian of the progress made in this branch of knowledge rather than as the one who has had most to do with its initiation, is to do him, we conceive, great injustice. To Mr. Grove is fairly owing the reputation of being an original thinker, and of possessing the most covetable power of being able to clothe his thoughts in such perspicuous and agreeable words as has enabled him to make the most recondite principles of science of most easy acceptation. To such as have never perused the "Correlation of Physical Forces," we say, "Here is the fourth edition."

The Popular Science Review: a Quarterly Miscellany of Entertaining and Instructive Articles on Scientific Subjects. Edited by JAMES SAMUELSON. No. 5, October. London: Hardwicke.

THE present serial continues to maintain its reputation for clothing good science in easy robes. Mr. Buckman commences the number by a paper on "The British Oak." Among other information, he tells us that the tree in question has of late years been attacked by a most formidable enemy—viz., a new species of cynips, forming a fresh kind of gall. So exclusively has the British oak been attacked, that in plantations where may be also found the American oaks, the Ilex oak, and Turkey

oak trees, the British plant has been the only one subjected to the operations of this new gall pest. Trees infected by it are crippled as though they had been submitted to constant pruning. Mr. Lankester has a short but interesting paper on "The Common Red Worm of our Rivers," or *Tubifex rivulorum*. The Editor's paper on "Barmouth" may tempt some future naturalists upon their summer holidays to try the *délices* of Cardigan Bay, so praised by the author. Mr. Gore concludes his memoir upon "The Electro-Plating Process;" and Professors Ansted, Crookes, and Breen descant respectively upon the Microscopical, Chemical, and Optical Instrument Departments of the Brompton Exhibition. The number concludes with the usual full and varied information concerning novelties in general science.

TRANSMISSIBILITY OF SYPHILIS BY VACCINATION.

To the Editor of THE LANCET.

SIR,—As this subject is now occupying much attention in Europe and elsewhere, the following circumstances will be considered of interest:—

On inquiring from the vaccinators on the establishment under my superintendence whether they had ever known of syphilis being produced by vaccination, I learned that many years ago this disease had on one occasion resulted. The vaccinator who operated in this instance had left the establishment for more than six years. I was fortunate enough to find out where the man was now living, and induced him to come to me. On questioning him, he stated that on one occasion he vaccinated ten or twelve people with lymph from a vesicle on a man who at the time had a syphilitic eruption on his body, and that an eruption of the same kind was produced on *each of the ten or twelve people vaccinated;* that this eruption was considered by the people themselves, and by the native doctors of the district, as syphilitic, and was treated accordingly; and that the disease was cured. On questioning him more closely, the vaccinator admitted that the vesicles from which the lymph was taken had not been opened carefully, and that *blood* was mixed with the lymph.

This is the only occasion in which, as far as I can learn, syphilis has resulted from vaccination in these hills (Himalaya). During the past year more than 40,000 people were vaccinated by the establishment under my care. The greater part of these cases I have personally inspected, and I have never seen syphilis produced. I have, however, always been very careful that none but pure vaccine was used.

I have sent large supplies of vaccine to many parts of India and Burmah. During the year 1861, the following quantities were despatched by me:—

Fluid lymph, in hermetically sealed tubes	...	318
Dry ,, on ivory points		124
,, ,, between glasses		50
Crusts		2180

The tubes were either charged by me or in my presence, and these contained pure vaccine lymph taken from healthy people. The other kinds I was obliged to leave to my vaccinators. These men are natives of India, and cannot be entirely trusted. They bring "crusts" to me in enormous numbers, and, though contrary to orders, doubtless many are taken from people suffering from syphilis. From these crusts I select the more perfect for despatch to the several parts of India; and I have never heard that syphilis has been produced from their use. It is generally believed that a true vaccine vesicle cannot be produced on a person who has a skin disease; I have, however, seen many true vesicles on such persons.

In vaccinating the people of these parts, the custom, and often the necessity, is to vaccinate at one time all the inhabitants of one division of a district. Sometimes the number so collected is very great. On one morning in April, more than 600 were vaccinated; and many of these people labour under syphilis, this disease being extremely common in these parts. A small quantity of blood (a drop, more or less) is drawn from the individual operated on. It is impossible for the vaccinators to cleanse their lancets after each operation; they merely wipe them. Therefore a lancet, after being used to vaccinate a person who has syphilis, is not really cleansed, and possibly has on it a certain amount of his blood, and this is inserted into the arm of another person; but, as above stated, syphilis is not produced by this, the amount of matter or blood being possibly too small. On many occasions I have received reports that an eruption had been produced on people who had been vaccinated. I have visited these, but have never found the eruption to be syphilitic.

I have been superintendent of this establishment since October, 1860, and during that time more than 80,000 persons have been vaccinated; and my experience leads me to conclude—

That syphilis cannot be transmitted by the use of true vaccine lymph;

That it is possible that inoculation with the blood of a person suffering from syphilis is capable of producing syphilis, but that this very rarely happens; and

That a true vaccine vesicle can be produced on an individual who has a skin disease.

I am, Sir, yours faithfully,

A. M. GARDEN, Assistant-Surgeon,
Superintendent Vaccinator, Hill States.

Camp Morndee, near Simla, April, 1862.

A CONFIRMED CASE OF DELIRIUM TREMENS, NOT OCCASIONED BY DRINK.

To the Editor of THE LANCET.

SIR,—A genuine case of delirium tremens, induced by circumstances *seldom* recorded, has just come under my notice, the particulars of which may, perhaps, have some interest for your readers.

J. D——, a stoker belonging to H.M.'s ship *Reynard*, went on shore to protect the British Legation at Yeddo, the capital of Japan, on the 28th of June last, and returned to his ship on the 10th of July in a state of delirium.

I should premise, that two men belonging to this ship, and also on guard at the Legation at Yeddo, were barbarously murdered there during the darkness of night, on the 27th of June, by one or more Japanese assassins. The following history—communicated by the surgeon in medical charge of the Legation—goes to prove that the patient's mind was so agitated that a state of extreme nervous excitement ensued; at all events, he was in delirium tremens when he came under my observation.

Extract from Surgeon Jenkins' Case-book.—"To-day the attack on the Legation has made a great impression on his mind, and he appears to labour under the conviction that he is about to be shot, and for some nights he has been excessively nervous and unable to sleep."

The night following his return on board, he left his hammock and ran on deck in a state of great alarm, the source of which he was unable to explain. There was a moist skin, soft and compressible pulse, and a tremulous condition of the tongue; in fact, no symptom indicative of "drunkard's delirium" was absent.

I may mention here that the patient (who has borne a good character in his ship) had not an opportunity of indulging in any intoxicating liquor; this has been satisfactorily proved by the officers under whom he was serving.

Treatment.—On presentation he had one grain of morphia, but no useful result followed. Two sleepless hours having elapsed, during which there was much excitement, he then took forty drops of laudanum with fifteen drops of chloroform; this secured the desired effect, having induced sleep half an hour after administration. I am aware that this remedy is a popular one, and I may add that a tolerably extensive experience has led me to regard the combination of laudanum and chloroform invaluable in the treatment of delirium tremens.

I am, Sir, yours obediently,

ALEX. MURPHY, R.N., M.R.C.S.E.

Yoa Ruhama, Japan, July 15th, 1862.

ARMY MEDICAL DEPARTMENT.—The death of Deputy Inspector-General Dr. Tice, C.B., a medical officer of much merit, who lately fell a victim to the climate of India, has been noticed by Sir Hugh Rose in the following terms of regret:—"The Commander-in-Chief has received with extreme regret your letter of the 22nd instant announcing the decease of Deputy Inspector-General of Hospitals, Dr. Tice, C.B., whose valuable services he so much appreciated, and whose death he considers to be a great loss to her Majesty's service." Dr. Tice served with distinction in the Crimea, and during the latter part of the campaign organized the Kulali General Hospital on the Bosphorus. He proceeded to India in 1857, and was employed in the field during the latter period of the mutiny. His death was caused by dysentery.

THE LANCET.

LONDON: SATURDAY, OCTOBER 11, 1862.

THE 1st of October has other uses for the medical profession and the public than the mere formal opening of the medical schools. The audience assembled at this annual ceremony consists, indeed, mainly of medical students in various stages of incubation, and of practitioners who are attracted by old associations and by a friendly impulse to shake hands with old comrades and teachers. But it is not to these alone that the orators address their discourses. In these days, when the press opens doors, throws down walls, and makes the voice of the lecturer reverberate throughout the world, it is hardly possible for a public lecturer not to look beyond the limited audience before him. Just as a speaker, surveying the hall in which he is to speak, seeking to pitch his voice so as to be heard by all, fixes his eye upon the most distant person, so the teacher who is giving the introductory lecture of a medical school, looks over the heads of students and practitioners, and utters words that appeal to the feelings or to the reason of the entire educated community. This being so, it may be expected that the numerous addresses delivered on the 1st of October will be marked by a breadth of purpose and an elevation of tone that would not be looked for if they were simply intrà-academical and professional in character.

In perusing the lectures published in our last number, the reader will, of course, discover some pointed allusions to the peculiar circumstances and advantages of the particular hospital or school to which the lecturer is attached. To pay some mark of homage to the *genius loci*—to make some reference to the personal changes in the staff, cannot be avoided. There was, however, but one instance in which the circumstances were sufficiently remarkable to demand engrossing attention to strictly domestic matters. That instance, of course, is the condition of the ancient Royal Hospital of St. Thomas's. This great institution, which had taken root for three centuries at the foot of London-bridge, has of late been forcibly displaced, and may at the present moment be regarded as a peripatetic hospital wandering in search of a permanent abiding place. Hence, naturally, is drawn the text of the discourse. Dr. BRISTOWE discusses with great ability the various questions connected with the construction of an hospital. He exposes the fallacy which has taken possession of intelligence not sufficiently informed by skilled observation, or governed by adequate force and calmness of judgment, that the advantages of country over town air are so preponderating that every other consideration—such as proximity to the centres of industry and of population where terrible accidents and acute diseases take their origin, accessibility for the friends of the suffering inmates, convenience of administration, the indispensable aid of a large staff of visiting physicians and surgeons, and the not less important aid of a large body of students to fill the subordinate offices of dressers and clinical assistants—must give way. The great truth, that no large hospital can possibly maintain its efficiency or its reputation without association with a medical school, is one of those things that are most difficult to impress upon lay governors. The advantage in respect of purity of air which could be secured at Blackheath would be trifling at best; indeed, Dr. BRISTOWE, who has had great experience in sanitary medicine, demonstrates that the sources of impurity in hospital air, as in ordinary dwellings, are almost invariably engendered *within the buildings* themselves, and admit of being eliminated by careful observation of hygienic rules. On the other hand, nothing can compensate the sufferer from a broken limb, or from a surgical operation, for the want of that intelligent care which the earnest student of the present day brings to his clinical duties.

The introductory lecture at St. Thomas's was also interesting on account of the novelty of the arena where it was delivered. A brilliant day, a large gathering of visitors intermingled with ladies, the beautiful gardens in the midst of which the new hospital and the various auxiliary buildings are erected, formed a scene in striking and pleasing contrast to the ordinary experience of hospital anniversaries. On this occasion, also, the lecture was followed by the distribution of the numerous scholarships and prizes. This duty was admirably performed by Mr. GRAINGER, who so long filled with distinction the office of Professor of Physiology.

In the other schools there are no events of equal importance to commemorate. Some few personal changes alone called for notice by the lecturers. In these cases, therefore, it might be anticipated that a more discursive flight would be taken. But in this respect it must be admitted that the lectures are scarcely equal in scope and ability of treatment to those of former years. In most cases, too much attention was devoted to the comparatively unimportant record of internal changes, and the indication of the transcendent superiority of the lecturer's particular school. In almost every instance, this form of egotism was displayed somewhat obtrusively; and in some there was not much else to give character to the discourse. The addresses that are the most free from this fault, that rise higher above the small immediate interests of individual schools, and invite the student and the practitioner to the contemplation of Medicine in its relations to Science and to the larger interests of humanity, are those of Dr. WILSON FOX, at University College, and of Mr. HUTCHINSON, at the London Hospital.

The introductory lecture given at the Army Medical School by Professor PARKES stands by itself,—and this not alone from the peculiar sphere in which it was delivered, but also from the importance of the topic selected for prominent discussion, and the force and elegance of the composition. The extended application of medical science to the care of our armies and fleets which characterizes recent times is a fact the importance of which cannot be too highly estimated. As Dr. PARKES well observes,—

"In these services Government is a gigantic employer, and places its labourers under its own conditions. It does what it likes with its soldiers and its sailors—sends them over the world, locates them, clothes them, feeds them as it likes. ..... On Government therefore, and on every officer who acts under it, is thus thrown a vast moral responsibility.'

This responsibility, if fully recognised by Government, as it now seems to be, cannot fail to have a strong and beneficial influence over employers in civil life, and to give a strong impetus to the extension of sanitary medicine.

A CONTEMPORARY—the *Builder*—has recently drawn attention to a strange anomaly which exists in London; namely, that, whilst drinking fountains have been placed along our highways and byways, in many of our miserable courts and alleys water continues to be as scarce as it is on board of an emigrant ship upon a long voyage. If any peripatetic philanthropist, traversing the classic regions of Clerkenwell, will pause for a few minutes some afternoon at the top of Fryingpan-alley or Lambs-court, he will be struck by seeing a crowd of *misérables* expectantly gazing at a piece of lead pipe, not more than half an inch in diameter, projecting from a mouldy-looking wooden stump. If our friend shall have travelled, and, like most philosophers, have come to be occasionally a little absent, he may imagine that he has fallen upon—to use an artistic expression—"a group of native Britons worshiping relics at a shrine." He will find, should curiosity keep him at his post, that the *autochthones* of these delectable abodes are not—like the early Persians—fire, but water worshipers, and that they are now awaiting the moment when it shall please the presiding turncock to let flow a stream which for the space of twenty minutes shall pour out for them long-looked-for wealth. As it is only for this short period, however, that the water-god will unload his urn, it is necessary that the Mistress BROWNS, JONESES, and ROBINSONS of the locality should be early at the spot, and ready with their various utensils, or they will see a great deal more of the pipe than of the water. So small is the stream which at length issues, that it is no easy matter for those who are provided with proper vessels to get what they require; and as for those who are not, the current ceases flowing long before they can procure them. For half the day many of these poor people have not a drop of water in their rooms; and even when they have, in very hot weather it becomes rapidly spoiled and vitiated, so heavy and noxious are the fumes from effete organic matter which load the offensive atmosphere. It is said that in a few hours' time water will become, if kept in some of these London chambers, unfit for entering the human system. In Fryingpan-alley we are told that at the time of a recent visit while the water was coming in, the smell from the closets and drains was abominable. In Lambs-court there is a small cistern, but it is of no use; for it is so broken that it will not hold any water.

If water be too precious in these sickly dens of misery to be obtained for drinking purposes, how is it to be expected that dirty skins and foul closets can receive any benefit from it? In the house marked A on the little plan given by our contemporary, a child had been suffering for more than a month from a low form of fever. Upon investigation, the cesspool of the privy was found passing under the floor, and the house drainage running into it! In another house, similarly situated, the tenant, who had his work at home, constantly complained of being ill, and finally was obliged to leave his residence; whilst in a third house, all the children were sick, the medical man having been in attendance for some time past.

"In consequence of all this sickness, further examination of the drainage was made, and a large cesspool was found in the rear of the house B. On raising the broken woodwork of the floor of the washhouse, a large pit, completely filled with poisonous refuse, was seen. There was no brick arch over the cesspool; no cover except the cracked boards, which were so much decayed it seemed providential that the children who were in the practice of playing over this pit had not fallen into it. Into this cesspool several houses to the northward drained.....These are untrapped, and not properly supplied with water."

The want of so necessary a thing as water, whether for domestic use or for the cleansing and flushing of drains and closets, is as badly felt in some of the overcrowded and noisome dens of London as it was ten years ago. A fountain at Knightsbridge, in Fleet-street, or Bloomsbury, will supply a refreshing draught to the thirsty wayfarer, or to such inhabitants of the back slums as choose to crawl out of their hiding places and await their turn at the metal scoop; but to suppose that the erection of many more of these street jets is what is specially wanted in the way of providing our half-starved, dirty poor with water, is about one of the strangest vagaries that modern philanthropy has fostered. In themselves, and for certain purposes, they cannot be spoken of too highly, and we have all along advocated their dissemination through the highways of the metropolis; but their purpose must not be confounded with one immeasurably beyond what they fulfil, and that is that the poor denizens of our courts and alleys shall have a constant and abundant supply of water for use at home, whether it be for drinking or cooking, or for cleansing their habitations and flushing their sewers. Until this be accomplished, marble tablets over lions' mouths giving out threads of fluid, may continue to record the names of beneficent citizens; but they will never prove that we have arrived at the true appreciation of that often quoted maxim—"cleanliness is next to godliness."

Whilst upon sanitary matters, we may also mention that the *Builder* of July 26th gives a pictorial sketch representing a mews near Russell-square, which serves to recall to mind the heaps of decomposing matters which, particularly when the atmosphere is warm and dense, cause these localities to be the foci of pestilent emanations, giving rise to unpleasant and unwholesome smells and to constant and obstinate sickness amongst the families who live within their influence. The mews of London are allowed to become a source of great annoyance. In some neighbourhoods they are

"Of considerable extent, formed behind rows of large and fashionable houses, by which they are hidden from the general view; and the circumstance of their being thus built in increases the necessity for the use of every sanitary precaution, not only for the preservation of the health of those dwelling around, but also of the animals which are lodged in the mews, and the men, women, and children who dwell, in numbers of cases, above them. During the winter months, when those engaged in the culture of land are at leisure, the refuse of stables, and, indeed, every other description of decomposing matter is eagerly sought for and readily removed. In the summer and autumn time, when there is in crowded towns the greater call for attention to the purity of the atmosphere, farmers, being engaged in their fields, do not care so much as at other times for manure, which is often allowed to remain unmoved."

At certain seasons a load of horse manure in London is, to the extent of a few shillings, more valuable than at another time, and as it is generally the perquisite of the stablemen, it is kept until the most favourable period for its sale, notwithstanding the great nuisance caused by its retention. It has been made compulsory upon the dust contractors and others to regularly remove their refuse from London before it accumulates to such enormous heaps as it was formerly allowed to do. Canal-boats, barges, and other means of conveyance, are now happily to be seen laden with such matters, conveying them at early

and definite periods into the country. Why, then, should our mews at the West-end, and analogous places in poor neighbourhoods, be allowed during the summer to violate both health and decency? Whilst our sanitary officers have over and over again drawn attention to the subject, which not anyone of the least sense of what is needful can but feel is demanding interference, it is with surprise that we receive the information that a deputation had waited upon the Chief Commissioners of Works, consisting of Alderman SALOMONS and others, for the purpose of opposing the wholesome proposition, that for the future some plan should be arranged for the regular removal of the refuse in question, and for the prevention of those accumulations which spread such an unhealthy influence over the places around. We do not happen to know the grounds upon which so sensible and necessary a sanitary reform was opposed by our civic wiseacres, but whatever they were, we may venture to say they must have been as immoderately ignorant as they were selfish.

Medical Annotations.

"Ne quid nimis."

HEALTH AND WEALTH.

THE paper of Mr. Purdy at the British Association, on the recent diminution of mortality coincident with increase of pauperism at Rochdale, created unnecessary but not inexplicable surprise. One speaker protested that it was a paradox; and another, that such facts ought to be suppressed at the present time, for they were calculated to check the flow of charity. The fact is that these results must be explained by a reference to the very various nature of disease and the multiplicity of the avenues by which death enters.

> "Of indolence, of toil
> We die; of want, of superfluity.
> The all-surrounding heaven, the vital air,
> Is big with death."

Amid all the signs of increasing distress, while the pauperlists of Lancashire have swelled to a portentous size, the health of the total population has not shown any corresponding deterioration. The barometers of health and wealth show no parallelism, but a wide divergence. We will not here recapitulate the figures, but they show that in no place has the increase in mortality kept pace with the growing poverty; while in some, health has actually improved. These observations are open to the objection of being somewhat partial and temporary; and it is likely that continued trials would give very different results. But the lesson for a temporary and compensating improvement in the death-rate is pretty obvious. The mothers who work in the mills sell, as Mr. Simon has said, not only their honest labour, but their infants' lives. The children very commonly are left under the influence of opiates, drugged, starved, and neglected, while the mothers are at work. Any calamity which removes the mothers from their work to their children is to the infant a blessing. Then large numbers of grown children employed in factories are by the stroke sent into the open air; and provided they have plain but not insufficient food, such as charity now provides for them, they will improve in health. The same conditions operate favourably for the adults in a less degree. This striking improvement in health of a population pauperized, may serve to remind the people of Lancashire that a want of money is not necessarily a want of health; and that in the daily sacrifices to the work-god they offer up the blood of many victims. It is so in Coventry, in Nottingham, and in all great industrial centres. Thousands of victims may be saved by taking the lesson to heart: by instituting an intelligent supervision of children left at home, and restricting the traffic in narcotics, which is the bane of childhood.

SHADOWY DEGREES.

MR. SOUTHEY expresses great admiration for the sentiment of an anonymous author:

> "The shows of things are better than themselves."

That sentence well expresses the permanence of many of the presentations of mortality, idols of the painter's, poet's, and sculptor's art—a permanency which so strongly contrasts with the mutability of the fleeting generations of men that we may often be tempted in their presence to entertain the feeling that "they are the realities and we the shadows." The phrase, so tempting in its pseudo-mysticism to minds of Germanic tendency, is susceptible, however, of some dangerous applications; and amongst those against which we most energetically protest is its adaptation to medical degrees of German universities. A contemporary announces an addition to the shadowy list of degrees "granted *in absentia*" by German universities. It is that of the University of Rostock, in Mecklenburgh-Schwerin. An individual, professing to be the correspondent of the University of Rostock, boasting 250 members, now circulates, in strict confidence of course, a printed tariff amongst those who reply to his advertisements, in which the university is described as dating from the fifteenth century; the fee for M.D. is £30 3s., entrance £3 3s., and diploma £27. Half the fellows who make pretence of selling German degrees are mere swindlers. We know nothing of the University of Rostock; but the sooner its authorities, if there be any, repudiate the present vending of titles in their name the better.

EARLY MARRIAGES.

FROM the interesting figures which Mr. Hermann Merivale has collected concerning the population of France, we may draw some good illustrations of the importance of early marriages to the well-being of the individual and for the progressive strength of the nation. The rate of mortality in France has not increased since the beginning of this century; the number of marriages has not diminished, it has remained stationary. Nevertheless the population of France has remained stationary, while our own has enormously increased. The "prudential check" on births has operated through later marriages, owing to the want of outlet for population by emigration. The result of this tendency to late marriages in France is, that the average fecundity of such unions is far below that in this country, and is steadily but slowly diminishing. Here the annual rate of fertility may be represented by 4·5. In France it has been, in 1822–31, 3·64; 1832–41, 3·41; 1842–51, 3·19; in 1855 it had fallen to 2·96; in 1856 it rose to 3·11. Nothing can bring out more clearly the unnatural and deteriorating influence of late marriages. Every physiologist and every physician knows that in proportion as advanced age operates to limit the number, so also does it affect the development and force of the children. The scanty offspring of late marriages will always, man for man, present a marked inferiority in physical qualities to the more numerous race springing from young and healthy parents. There are accessory conditions engendered by this state of society, this "prudential check" upon marriages, which increase the evil. The irregularities of unmarried youth too often taint the blood and sap the force of the procrastinating husband; the irregular unions which abound in France are as notoriously infertile as they are dangerous. In this country, modern habits of luxury threaten to have an operation only less dangerous because more limited than the "prudential check" arising in France from an absence of outlet by emigration. The figures which we quote afford striking illustrations of its dangers, and should give a fresh impulse to statesmen and moralists in combating the tendency to late marriages.

WITCH DOCTORS OF SOUTH AFRICA.

THOSE skilled in the ancient lore which describes the "*Dardanicæ artes*" of earlier times will find a special interest in a report by Dr. J. P. Fitzgerald, Superintendent of Native Hospitals in South Africa, of the means taken by the Witch Doctors of the interior to cure a child affected with tumour of the jaw, who subsequently came under his care. This report, made to the Government, was justly thought by the Lieut.-Governor to be of sufficient value to be printed as a "Government Notice." The details are of grotesque interest. The report runs thus:—

Gushinduka, a Tambookie native, belonging to the Chief Joe, living beyond the Bashee, having in vain consulted ten of the most distinguished members of the native faculty about a tumour which was growing on the upper jaw of his child, pushing up the lip, undertook a journey to King William's Town, a distance of about 120 miles, to consult the medical officers of the Native Hospital.

Gushinduka stated that the tumour had been growing about three years. The first doctor he consulted was Dr. Slegasa, a Fingo doctor of the Umbo tribe, of great repute in the country. He sent two assegais as a fee with the messenger to request his professional aid. The doctor responded to the call, and presented himself in full costume, with a baboon's skin on his head, a kaross of wild animals' skins round his waist, and cows' tails round his arms, his face having been previously spotted with some black pigment.

On the arrival of the doctor, and before he examined the patient, a cow was slaughtered, of which the doctor and his attendants plentifully partook, in order to strengthen the stomach, and make him more powerful in his exertions for the patient. This is a most important part of the proceeding, and it is supposed that the more liberal the friends are, and the larger the fees, the more attentive and successful will the doctor be in his attendance on the sick person. The doctor having fortified the inward man, proceeded to investigate the cause of the complaint, by assembling the people for a witch dance. They collected in a ring, and the doctor commenced dancing in the centre, and sniffing up the air with his nostrils; after dancing some time, invoking the spirits, he listened attentively to what they had to say, and then pronounced his opinion as follows:—

"The child dropped one of its teeth one day while playing with another child; that this child took up the tooth and gave it to its mother, who delivered it to a river snake, and that this snake caused the tumour to grow on the child's jaw; and also that the snake had still possession of the said tooth; and further that the snake lived in a hole in the bank of the river."

This woman was suspected of having done this out of revenge, because Gushinduka, the father of the child, caught her twice stealing mealies in his garden: the first time he forgave her; the second time he made her pay one of those karosses with chains down the back.

The doctor was requested by the father to proceed to the river and recover the tooth—a step all-important for the cure of the disease; and he gave him another assegai, as a fee for his trouble. The doctor, after searching for some time, said he could not succeed, as the snake had departed with the tooth to some other part of the river. He then said he should apply some medicine to the tumour, which proved, however, ineffectual. This doctor soon took his leave of the patient, declaring his inability to cure the disease owing to the snake having possession of the tooth.

Dr. Queleshe, a Pandomise doctor, was next consulted. He was a man in extensive practice, and enjoying considerable reputation; in fact, both he and Dr. Slegasa had often to undertake extensive journeys on professional business. The first fee sent in this instance to call Dr. Queleshe was a goat. The doctor answered the call, and presented himself with a jackall's tail on his forehead, and his face spotted with black pigment. Dr. Queleshe also had a witch dance; and when it was concluded, he said that the spirits of the child's grandfather and relations who were dead were in want of food, and that Gushinduka had never killed cattle for this purpose; that those spirits were angry on this account, and that it would be necessary, in order to propitiate them, to kill a bullock. This was done, and the entire ox cooked and eaten by the assembled people. The doctor had the head, together with the entire inside and a large supply of the flesh, set aside for himself and his attendants. The spirits of the departed friends who had caused the tumour to grow on the child's jaw were supposed to join in the feast. This sacrifice to the spirits had no effect, however, on the tumour, which continued the same; and Dr. Queleshe, having applied some medicine to the tumour, returned home. After the lapse of a few days the father applied again to Dr. Queleshe; but the doctor said he was unable to do any more for the child.

Dr. Oli, a Kaffir doctor, was next consulted. He gave it as his opinion that some spirits which were in alliance with the child's aunt (a different order of spirits from those of relations or friends) had done the mischief, because the aunt would not give her consent that those spirits should take the child, to which they had taken a fancy. The doctor then said that the spell should be broken, and all alliance between the woman and the spirits put an end to, otherwise the child would not get well. The woman was then taken to a place at some distance from the kraal, stripped of her clothes, and washed with some medicine. She was not allowed to take back her clothes, which were left in the bush. She was also given some medicine to chew and spit about in the air, in order to chase the spirits away; and when she went to sleep at night, she was to bite some of the root, and spit about, in order to drive those spirits away which used to visit her in her dreams.

But notwithstanding the prescriptions of these three eminent native doctors, no change was effected in the disease, which continued undiminished in size.

This child was taken into the Native Hospital, put under chloroform, and the tumour with a small portion of jaw-bone excised. The child has recovered, and has left with its father for the Tambookie country, the deformity of the face having been removed.

Gushinduka paid three cows, four goats, and five assegais, as medical fees in this case to native doctors.

THE INFLUENCE OF RAILWAY TRAVELLING ON HEALTH.

REPUBLISHED by Mr. Hardwicke, of Piccadilly, in the form of a shilling volume, THE LANCET "Report on the Influence of Railway Travelling on Public Health" is now extending to the wide circle of railway travellers generally the important data which it was the primary object to collect for the information of the medical profession, who are the proper guides and arbiters in respect of the questions raised. The *Cornhill Magazine* gives this month the aid of its large circulation and great popularity to the ventilation of this subject, so intimately connected with public hygiene. The courteous appreciation of their labours cannot fail to afford satisfaction not less to the eminent men who so freely yielded for the professional discussion of these questions the large stores of their experience and the suggestions derivable from it, than to the able reporters who lent us their aid in indicating lines of inquiry, and in collecting, condensing, and drawing conclusions from the data afforded. The general utility of this report will increase in proportion as its suggestive collection of facts are more widely considered by various minds. The last word is far from having been said; but already enough has been learned to dispel groundless alarms, suggest much-needed cautions, and to substitute facts for vague theories.

ELECTION OF A PUBLIC ANALYST IN DUBLIN.

AT length the fearful extent to which adulteration has been carried on in Dublin has aroused the corporation to a sense of the necessity of appointing a public analyst, under the provisions of the 23rd and 24th Victoria, c. 84. His business will be to analyze all articles of food or drink purchased in the city which may be submitted to him for the purpose. Professor Cameron has been elected by ballot, by a large majority. There were three other candidates. It is stated on good authority that the health of the people is much injured by the deleterious nature of the articles which they daily consume. Since the duty was raised, whisky is said to be adulterated to an enormous extent: it is first diluted with water, and then fiery ingredients are added in order to stimulate the palate. The result is a villanous compound, which has sometimes a sickening, sometimes a maddening effect, and is the main cause of quarrels and assaults among the lower classes. Tea, sugar, and tobacco are also largely adulterated. It is to be hoped that the public analyst of Dublin will be supported by the corporation in the duties of his office. There is a fine opportunity, with proper management, for him to confer a great benefit on the Dublin community.

Report

ON THE

DRAINAGE OF BRIGHTON,

WITH A

CHEMICAL AND MICROSCOPICAL ANALYSIS ILLUSTRATIVE OF THE POLLUTION OF THE SEA AND WELL WATERS.

I.

BRIGHTON may justly be considered one of the lungs of the metropolis: it prospers, nay exists, by the support of the inhabitants of London. By its position in another county, and by the interposition of a certain amount of country between the two cities, it cannot be included in metropolitan legislation. Yet what a benefit would it not have been to the frequenters of Brighton if, in accordance with the metropolitan laws passed for the sanitary benefit of London, a system of sewerage had been made compulsory years ago, and if the cesspools, which have been in a great measure abolished in London, had been in a similar manner extirpated on the Sussex shore! For it may seem scarcely credible to many, yet it is nevertheless a fact, that fully three-fourths of all the houses of the town are dependent for their drainage upon cesspools situated in the porous chalk on which Brighton is built. In London, when cesspools existed, they were chiefly employed as tanks of deposit, where the solid sewage was allowed to subside, while the fluid soil overflowed into a drain and escaped by the sewer into the Thames. But in Brighton there are scarcely any drains and sewers. The soil from the houses is discharged into the cesspools, where it must remain and fester, or escape as it may through the walls of the pit and permeate the surrounding ground, or flow in a retrograde manner into the house and soak into the basement. It is true, theoretically, that these cesspools should be emptied periodically; but, in practice, this is very rarely accomplished. The occupiers of lodging-houses, whose tenancy is rarely of long duration, seldom have any acquaintance with the destination of the household sewage; and when the temporary sojourners complain of the fearful odours so familiar in Brighton, they are assured that the owner has promised to abate the nuisance; but this desirable consummation is never effected in their time.

The result of this pestilential infiltration of sewage into the ground is that the wells are rendered impure, and are supplied from a never-failing source with abundance of putrefying fluid. We have requested Dr. Dundas Thomson, F.R.S., whose labours in this department of sanitary science are well known, to examine chemically and by the microscope both the sea and well waters of Brighton; and his results demonstrate the foul pollution of the water, through the infiltration of the earth, with sewage. The samples of water were taken from wells in the northern part of the town, from the centre of the inhabited portion, and from a southern locality. The following are the constituents of the pump-water taken from the northern well:—

Total impurity in grains, or degrees, per gallon ...	63°·60
Organic impurity ,, ,, ,, ...	17°·52

The organic matter in this water has undergone little or no oxidation, so that it must have but recently reached the well. A very frequent test of the connexion of the London wells with sewage is the presence of ammonia—an evidence of a comparatively recent admixture of soil with the water of the well. If the sewage has traversed a considerable thickness of porous earth, this ammonia, formed at first from the nitrogenous animal matter, has passed into the condition of nitric acid by undergoing oxidation in presence of the oxygen of the air. But when the organic matter exists unmodified, and in such a large amount as in this well, it is a proof that the source of contamination is abundant and close at hand.

The composition of the well situated about the centre of the town is as follows:—

Total impurity in degrees, or grains, per gallon ...	62°·72
Organic ,, ,, ,, ,, ...	7°·52

In this water there were distinct traces of nitric acid, showing that a portion of the water at least had percolated porous soil, while a large portion of organic matter, however, still remained in an unoxidized condition, or in the state of more crude sewage.

The constituents of a well placed in the southern division was characterized by the presence of a larger quantity of inorganic impurity, and likewise of organic impurity.

Total impurity in grains, or degrees, per gallon ...	82°·56
Organic ,, ,, ,, ,, ...	8°·32

This sample afforded undoubted evidence of the presence of nitric acid, as the produce of the oxidation of nitrogenous matter which had previously passed through the transformation of the ammoniacal stage.

These analyses sufficiently prove the baneful influence of the present system of disposing of the sewage of Brighton, since the porosity of the earth and rock enables it to penetrate in all directions, and to saturate with malaria the ground upon which the population of the town is placed. It is true a small portion of the sewage is discharged into the sea; but the amount must be fractional, when we are informed that only 8¼ miles of *sewers* and *drains* exist, while above 40 miles of sewers *alone* are required, according to Mr. Rawlinson, to render the town healthy. If it be a correct estimate that three-fourths of the houses are drained into cesspools without any sewer outlet, it would appear that only one-fourth of the sewage is discharged into the sea in front of the town by three separate outfalls. Perhaps the largest proportion, we may conclude, runs into the sea at the Old Steyne, where at ebb tide the smell is insufferable to anyone whose olfactory nerves have not been blunted by the foulest education. The sewage, it is professed, is delivered at the mouth of the iron pipe which terminates near the buoy off the point now indicated; but on the withdrawal of the high-water pressure the overflow boils out by an aperture in the pipe close to the shore, this arrangement being necessary in the absence of tanks to retain the sewage during the flow of the tide. It is at this point that boats are most accessible for hire, and the boatmen complain of the constantly increasing foulness of the water, which interferes seriously with their trade in consequence of the exhalations, which disgust their customers. Serious accidents, it is affirmed, have arisen, and

even death has been produced, by the poisonous or suffocating action of the gases or vapours upon persons bathing between this locality and the pier. Water collected at this point at ebb tide, even in small quantities, has a disgusting odour, even in rainy weather, when the sea water is largely diluted with the storm water with which the sewage is accompanied. The yellow colour of the water in these conditions is familiar to residents at the coast, forming as it does a broad band from the shore, varying in breadth, according to the strength of the wind and flow of the tide, but extending for several hundred yards from the shore. Extensive though this yellow shore-fringe is, yet it must be all intermixed with sewage. Close in shore at the Old Steyne outlet its smell is noxious; it lets fall a yellow deposit after standing at rest a few minutes. The filtered liquid is light compared with clear sea water at the pier and at Hove. A gallon of pier water, when free from sullage, weighs, according to the experiments of Dr. Dundas Thomson, 71,820 grains; and the same weight has been obtained for the pure sea water opposite Kemp Town; while the same bulk of water close to the shore at the Old Steyne, mixed with sewage and storm water, with a decided odour, after subsidence gave only a weight of 70,840 grains; midway between the shore and the buoy, the weight of a gallon of the yellow water, free from deposit, was 71,400 grains. These results exhibit the enormous influence produced by the drainage of Brighton upon the sea in front of the houses of the town—thus changing its character over hundreds of acres.

We claim it as a right for the metropolitan public, that Brighton, with every facility for sanitary improvement, should be placed on a similar condition of health to London. While even the small neighbouring town of Worthing has been thoroughly drained upon a model system by which the sewage has been thoroughly removed miles from the town, the authorities of Brighton have allowed several years to elapse occupied in twaddle. And yet we are assured by the best engineers that the most thorough system of sewerage might be completed within twelve months.

Three methods of drainage have been proposed by three several engineers, of which we shall give a brief outline.

The first report, dated May 14th, 1859, is by Mr. Robert Rawlinson, who is now understood to be the engineer of the Privy Council, and has had considerable experience in the drainage of towns. He is of opinion that the geological character of the district on which Brighton is situated is most favourable to the formation of sewers and drains. He characterizes the present main outlet sewer opposite the Steyne, as well as those at Kemp-town and Western-street, by means of sewer trunks and cast-iron pipes, as nuisances; which might be improved, but the nuisance would thereby only be reduced—not removed. He clearly affirms that for the sewerage of Brighton and the adjoining districts there should be one outlet, and this should be placed as far as possible from the inhabited shore. All outlets for sewage he thinks should be removed from the sea fronting the town; but there may be storm outlets for heavy falls of rain, so as to limit the size of the sewers within reasonable dimensions. He considers that the new trunk outlet on the Pavilion valley which is discharged into the sea at the Old Steyne will answer at all times to remove storm waters, and will be so far useful. The whole sewage of Brighton he thinks ought not to be discharged into the sea opposite the town, as at present, but might be taken either to the east or to the west; and so obvious is this to his mind that the corporation ought to have power to go beyond the existing municipal boundaries. Mr. Rawlinson then weighs the facilities in carrying the sewage in one direction rather than in the other, and decides that the outfall sewer should fall to the west, because the height of the cliffs to the eastward is a great obstacle to pumping the sewage inland for agricultural purposes, while to the west the proximity of Hove and Brunswick-square with Cliftonville and West Hove prevents any western outlet being formed on the western boundary of Brighton proper. He decides on carrying the entire sewage to the end of the canal connected with Shoreham harbour. The advantages of such a position for the outfall are—that it is free from houses; it is opposite a large area of agricultural land at a moderate elevation, over which the sewage (if at any time so decided) may be distributed partially by gravitation and partially by pumping; and the facilities are great for conveying away any solid deposit derived from the sewage. In order that the sewage may be discharged into the sea so as effectually to prevent the possibility of any noxious influence being experienced from its vapours, it is proposed to construct an outlet of cast-iron, half a mile in length, along the beach between the sea and the harbour canal, and down to below low water mark. By this arrangement the sewage will be carried in a direct line westward, about four and a half miles from the eastern boundary of the borough, and about two miles and a quarter from the western limit, and not less than one mile and a half from the nearest houses in Cliftonville. To effectually attain the objects enumerated, it is proposed to carry an intercepting main sewer along the sea-front from Kemp Town to West Hove. This main will receive a principal main sewer from the Pavilion Valley, while the sewage in the higher district of the west of the valley will be intercepted from the lower level by sewers along Queen's-road and Western-road, so as to be turned into the main outlet sewer down Old Dyke-road, west of Cliftonville. The whole scheme will comprehend 78,386 yards, or forty-four miles and 956 yards, of new public sewers, 600 manholes and ventilating shafts, 600 lamp-holes, and 3000 street gully-holes. The whole cost would be £123,000. This is a comprehensive scheme, as it retains vividly in view all the main points imperative in the sanitary improvement of a town. It admits, likewise, of the application of the sewage to agricultural purposes when proper arrangements have been devised for the practical application of what is at the present time too generally wasted. It must be a subject of regret to every one who reads this Report, that Mr. Rawlinson's scheme was not adopted, and that its valuable provisions have been allowed to lie dormant for three and a half years—indeed, until it is no longer practicable; since the Hove Commissioners, far more alive to the health of the town than the tardy Corporation of Brighton, have finished their portion of the cleansing and have been obliged to carry their outfall in front of the inhabited part of the coast. From the restricted nature of their jurisdiction, they have arranged the incline of the sewers towards the east, so that the plan of Mr. Rawlinson is impossible unless the expense is incurred of reversing the fall of the Hove sewer.

The second scheme of sewerage is dated 29th October, 1859, and is signed by Mr. Hawkesley. He proposes to construct 70,000 yards of new sewers, and to discharge their contents, by three outfalls as at present, into the sea in front of Brighton, by means of a 30-inch cast-iron pipe, at the Old Steyne, to be conveyed 550 yards out to sea; the other two pipes at Western-street and Black-rock being of 24 inches diameter. The estimated expense is £57,000.

This scheme might have been reckoned almost a joke in the present state of sanitary science, if the key to its presentation to the Corporation had not oozed out, where the author says that other more effectual means, proposed by others, can be adopted "if money be provided for the purpose; but as it was the object of the report to suggest a sufficient method at a minimum of expense to the public," he has not taken the trouble to examine the other "unnecessary projects." The scheme, contrary to the received opinions of sanitarians, considers it established that "the profitable utilization of the liquid sewage of Brighton is, in the existing state of science, quite impossible." As this plan is boasted of as financially economical, and as it retains the *dejectamenta* of the town in view of the inhabitants as long as possible, it has been characterized as the "cheap and nasty scheme,"—(*vile et fœdum*). It is most gratifying to find that no other engineer has been found to endorse, at least in print, the recommendations of this remarkable document; and we hope that the inhabitants of Brighton will oppose, as one man, the expenditure proposed merely to modify the present horrible disposal of the sewage. The effect of such a scheme would be to pour four or five times as much sewage into the sea as at present; and although it is proposed to carry it out 550 yards, it is obvious that, by the force of its evection, and by the diffusive power of the fluid combined with the action of the preponderating winds, it would make its way close to the shore. During a portion of each day the public would be obliged to gaze on this filthy mixture, and breathe its suffocating emanations; while the bathers, if they had the courage to immerse themselves in such a fluid, would derive sickness rather than health from its polluting influence. It is a curious opinion, prevalent among the boatmen, that the pure sea water of former days at the Old Steyne after simple bathings used to cure their limbs when grazed by accidents, but that the sewage mixture at present

existing in that locality has an irritating action, and produces cutaneous eruptions.

The corporation of Brighton appear to have remained dormant for nearly three years on the subject of improving the town, when, at the instigation apparently of one of the members for the borough, a public meeting was held in the early part of the present year, and a committee appointed obtained a survey and report from Mr. Maclean, the distinguished engineer, in conjunction with Mr. Wright. To anyone who is disinterested, and acquainted with the present condition of sanitary science, it appears the only plan applicable, now that Mr. Rawlinson's scheme has been rendered impossible by the apathy of the Brighton authorities. Messrs. Maclean and Wright propose to have an intercepting sewer, which may be made to commence at the eastern termination of the Hove sewer, and will pass along the sea-front to Western-street; thence north, up this street, east by the Western-road to the Old Steyne, along St. James-street to its eastern end; then down Grafton-street and along the Marine-parade, and by the sea through a tunnel in the chalk to the outfall beyond Rottingdean, three miles and a half from Kemp Town. The plan is analogous to that of Mr. Rawlinson, having similar important objects prospectively in view, and among others the utilization of the sewage, or a portion of it, upon the land in the district or neighbourhood through which it passes. The cost of the outfall sewer will be £30,000, while that proposed by Mr. Rawlinson was £40,000. To this must be added the construction of the sewers throughout the town, which would probably be equal to the same amount. It is gratifying to find that the Hove Commissioners and their intelligent surveyor take the rational view that the sewage of the whole population should be conveyed to the east of the town. We most sincerely trust that the authorities of Brighton proper will be influenced by similar views; that they will take the opinion of the best engineers, and be guided by them; and that no false ideas of economy may enter into their calculations. The expense will be ultimately paid by the London visitors. Let a decision be immediately arrived at; and let the works be completed within twelve months. The only rational modes of drainage are such as those of Messrs. Rawlinson and Maclean. The intelligence that such a plan as either of these was to be carried out forthwith would be most beneficial to the interests of the Brighton residents, while the attempt to pour the drainage into the sea in front would be fraught with the most serious injury to the prospects of this beautiful watering-place.

In the Second Part of this Report, which will appear in our next number, we shall proceed to the microscopical demonstration, with drawings, of the impurities with which the sea- and well-water of Brighton are polluted.

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

MEETING AT CAMBRIDGE,

FROM OCT. 1ST TO 8TH INCLUSIVE.

ALTHOUGH it was not expected that the attendance would be in any way so large as at Manchester last year, a considerable number of persons assembled at Cambridge, influenced, no doubt, to some extent, by its University associations and its proximity to the metropolis. The number of foreigners present was not great. The meeting caused a good deal of excitement in the town. Many of the visitors were accommodated with rooms in the various Colleges, and were treated with the utmost liberality. Socially, therefore, the meeting promised to be a pleasant one. As usual, the members of our profession came in for their share of the hospitality of their brethren, who spared no pains to make them feel that they were at home.

The opening meeting took place in the Town Hall, when the chair was resigned by Mr. Fairbairn, the late President, to the Rev. Professor Willis, who proceeded to deliver an eloquent address, in which a review was taken of the past labours of the Association from its foundation, and the extent of the scientific services which it had rendered in a variety of ways was fully shown. At the delivery of this address, which was much applauded, there were about 1200 persons present.

The regular sectional business of the Association commenced on Thursday, October 2nd, when papers were read on various subjects. We can, however, only refer briefly to those which possess an interest for the physician, the physiologist, and the comparative anatomist, most of which were brought before the Physiological Section.

A paper from Dr. GEORGE ROBINSON, of Newcastle, was read, "On the Study of the Circulation of the Blood," which had reference chiefly to the appointment of a committee for the purpose of investigating the physics of the circulation, with the view of rendering more intelligible the connexion existing in the living body between the motion of the blood and the performance of the secondary functions of life.

This paper was referred to the Council of the Association; but in a short discussion which followed, Mr. GARNER remarked that, without any wish to detract from the merits of Harvey, he thought it was certain that Servetus had adverted to the circulation through the lungs, and had understood that part of the circulation before the time of Harvey.

Dr. PAGET, the President of the Section, observed that, whilst he would not deny the correctness of what Mr. Garner had said respecting the circulation through the lungs being known, yet to Harvey was due all the credit of his great discovery, and he had had no opponents worthy of note.

The SECRETARY of this Section then read a paper sent by Dr. CHARLES KIDD, "On Simple Syncope as a Coincident in Chloroform Accidents." The main argument of the paper was to show that in a certain proportion of cases death has ensued from syncope, simple fainting fits, or shock, the result of apprehension regarding the surgical operation about to be performed, or of the sight of instruments &c., and not so much from the chloroform itself; and yet, the author of this paper believed, chloroform improperly got the credit of the death.

Dr. PAGET had been interested in observing cases where the patients had lost their sensibility to pain without losing consciousness. He had seen this a few times, and believed it to be a common occurrence. He should be glad to hear of any explanation of this.

Mr. HOUGH had found chloroform of great service in the practice of midwifery, and he had often observed the circumstance mentioned by the President to occur, for whilst the pains of labour were not felt the patient remained conscious. He thought the fear of death from chloroform amongst patients prevented its use, but he never hesitated to employ it when they wished for it. He had no fear of its use himself.

Dr. PAGET asked Mr. Hough if his patients were insensible to contact, although consciousness was present.

Mr. HOUGH said they could feel the contact of the hand.

Dr. DAVY referred to the anecdote related by Dr. Simpson, the discoverer of this agent, at the Oxford meeting of the Association, and of the narrow escape he had had when he was about to give chloroform for the first time. In this case the patient suddenly died, and had the chloroform been given, no doubt the death would have been attributed to it.

Mr. HELM believed that in some cases chloroform acted as a direct poison, and he thought we could not prophesy whether a person could take chloroform well or not.

Some further discussion ensued, in which Dr. Filippuzzi of Padua, Mr. Garner, Dr. Gibb, Dr. Edward Smith, Dr. Davy, and the President, took part. The last gentleman observed that death appeared to take place in more ways than one—sometimes by syncope, sometimes by asphyxia; but he could not help thinking that some deaths might be due to the condition of the blood before the administration of the chloroform. He referred to diabetes as an example, in which it seemed to act as a virulent poison.

"Some Additional Observations on the Coloured Fluid, or Blood, of the Common Earthworm (*Lumbricus terrestris*)" were read by Dr. JOHN DAVY. These went to show that the fluid served for the purposes of both nutrition and aëration or respiration, and were confirmed by a series of experiments, which were described. Dr. Davy considered the blood to be a receptacle for oxygen, which is stored up in it to supply the small wants of the worm. A discussion ensued, in which Dr. Hodgkin, Mr. Garner, Dr. Gibb, and Mr. Marshall took part.

"The Physiological Effects of the Bromide of Ammonium" formed the subject of a paper by Dr. GIBB. His experiments, he stated, although not complete, were sufficiently positive in their results to justify him in bringing the subject before the Association. The salt was prepared in a pure form by Messrs. Fincham, of Baker-street, London; and according to the quantity given and the manner of its administration, so did it act as a tonic, sedative, or antispasmodic. The structures chiefly affected by it were the skin and mucous membrane, and fatty

compounds. Anæsthesia of the fauces was produced by it, in a more positive manner than by its sister salt, the bromide of potassium; and not the least important of its properties was its power of diminishing fat in the economy, and its influence upon the arrest of atheromatous changes. The author believed that with regard to its action in the diminution of moderate corpulence and allied states, it would be found ultimately of more value than the *Fucus vesiculosus*, or any other substance at present known.

Dr. EDWARD SMITH attached much importance to Dr. Gibb's communication; for it was still a desideratum in the treatment of throat affections to find a remedy which by topical application would allay irritability. He could not see how it could be, as the author stated, that it contracted the vessels of the mucous membrane, and yet increased the secretion. He did not understand in what manner it could be useful in fatty heart by its asserted property of causing absorption of fatty matters; since, if the oil could be removed from the sarcolemma, it would not follow that sound muscular tissue would be renewed in the place of the degenerated tissue.

Mr. GAERNER said he would endeavour to corroborate one of the author's circumstances: that there are medicines which produce absorption of fatty tissue. He had seen an instance wherein iodide of potassium had removed the stoutness and fat, and the person became emaciated and thin.

Dr. PAGET observed that the bromide of ammonium was quite new to him. The bromide of potassium he had given for months together in epilepsy without any visible effects on the structures. In two instances it was very beneficial, and in one the feeling expressed was of great comfort from its general soothing influence; indeed the person quite reckoned upon the use of this substance.

"The Extent of the Earth's Atmosphere" was the subject of a communication from the Rev. Prof. CHALLIS. He contended that it could not possibly extend to the moon, as was surmised by the Astronomer Royal. A paper "On the Foot-Poison of New Zealand," by Dr. W. LAUDER LINDSAY; and another on "Colour as a Test of the Races of Man," by Mr. J. CRAUFORD, were also read. The author of the last-named paper endeavoured to show that the human race did not spring from one source only; for colour in different races appeared to be a character imprinted upon them from the beginning, because, as far as our experience goes, neither time, climate, nor locality has produced any change. Instances of this he brought forward in proof—e. g., Egyptian paintings, 4000 years old, represent the people as they now are. The Parsees in India, the negroes in America, and the Spaniards in tropical America, are the same now as when they first went there. He contended that climate had no influence in determining colour in different races.

The second day's proceedings were full of interest, for the great battle of the "Brains," as it was called, came off in the Zoological Section, when Prof. OWEN read his paper "On the Zoological Significance of the Brain and Limb Characters of Man; with Remarks on the Cast of the Brain of the Gorilla." After exhibiting the cast of the human brain and that of the gorilla, the Professor proceeded to describe the peculiarities of each, which were of such a character as clearly to point to a different genus. He remarked that the comparative brain of the different mammalia afforded a much better guide to the character of the species than the fact that in the foot the differences between the gorilla and man were not less striking and characteristic. These differences were minutely explained by diagrams, and he expressed the opinion that man stood in a sub-kingdom of his own, apart from all other mammalia.

The positions of the Professor were argued by Prof. Huxley, Dr. Rolleston, Mr. Flower, and others, who endeavoured to controvert them; but notwithstanding the violence and apparent acrimony of the debate, Professor Owen successfully established the truth of his propositions, in which he was supported by nearly the entire meeting.

Professor OWEN then read a paper "On the Characters of the Aye-aye as a Test of the Lamarckian and Darwinian Hypothesis of the Transmutation and Origin of Species," which was followed by another communication by Mr. A. D. BARTLETT, entitled, "Observations on the Habits of the Aye-aye living in the Gardens of the Zoological Society, London." These papers excited lively interest. The discussion which ensued was not less animating than that on the previous paper of Prof. Owen.

Dr. CLELAND read a paper "On Ribs and Transverse Processes, with special relation to the Theory of the Vertebrate Skeleton."

In the Physiological Section six papers were read on the second day, the first being "Remarks on all the known forms of Human Entozoa," by Dr. SPENCER CORBOLD. These were illustrated by numerous drawings and diagrams. He stated that the human body was liable to be infested by as many as thirty different species of these internal parasites; and he communicated the results of his studies and researches into their history, structure, habits, mode of development, and migrations. He showed the possibility of checking the progress of epizootic diseases, warmly advocated the further vigorous prosecution of experimental researches in the direction above indicated, and appealed to the Association to assist him in carrying out these curious investigations on a much more extended scale. He showed that there was one genus exclusively common to man and monkeys, the *Bilharzia hæmatobia*.

Dr. EDWARD SMITH read a paper "On Tobacco-smoking: its Effects upon Pulsation." He showed, at the suggestion of Mr. Dale, of Scarborough, and after a series of experiments upon several gentlemen, that in some persons an increase of 20 to 37½ pulsations per minute occurred within twenty minutes, whilst in others no increase was observed. When the increase occurred, it was after about six minutes, and then rapidly progressed until a maximum was attained before the end of about twenty minutes. After the smoking had ceased, the pulse fell in a few minutes; but there was yet some increase for at least two hours. He had investigated the effect of smoking through a hookah, and of smoking with varying rapidity and depth. He had not discovered any method of determining the persons in whom the increase would or would not occur, except that of direct observation, and the period for making the observation is about ten P.M. in perfect rest, and with food taken not later than six o'clock. The effect was quite analogous to that of a stimulant, and might be as useful as wine to the literary man at night, if in him it increased the pulsation.

The question "Whether Arsenic taken for lengthened periods in very minute quantities is injurious" was the subject of a paper by Dr. JOHN DAVY. He gave an account of a mountain stream in Cumberland, named Whitbeck, which contained minute quantities of arsenic, and which has been used from time immemorial by the inhabitants of a neighbouring village without any marked effect, good or bad, on man and animals, with the exception of ducks, to which the feeding in it proved fatal.

Dr. HARLEY followed with a paper "On Secret Poisoning." He believed that the cases of secret poisoning that were discovered formed but a small per centage of those that actually occur; and he observed that the great desire of the poisoner was to get hold of a poison the effect of which would so closely resemble that of natural disease as to be mistaken for it. Fortunately this was attended with great difficulty, for reasons which he set forth. But both this paper and Dr. Davy's went to show that certain poisons could be taken for a considerable period of time without any serious detriment to health. An interesting discussion followed, in which a number of gentlemen took part.

Mr. J. W. OSBORNE, of Melbourne, Australia, read a paper entitled "Observations made at Sea on the Motion of Vessels, with reference to its effects in producing Sea-sickness." He exhibited three instruments, and explained the principles on which they were constructed, and their mode of action in giving different expression to the amount, intensity, and direction of the mechanical forces which operated in producing illness at sea. From numerous observations and exact measurements made during a long voyage, Mr. Osborne expected to throw some light upon the laws of nutrition and waste in connexion with active and passive movements in the human body, but as yet his observations had not been reduced or tabulated.

"The Climate of Guernsey" formed the subject of a communication in the Geographical Section by Professor ANSTED, the purport of which was to show that the climate is humid, like that of most other islands, but possessed certain variations and peculiarities, which he pointed out with clearness.

On the third day, in the Chemical Section, papers were read, by Mr. G. C. FOSTER "On the Principles upon which Atomic Weights should be determined;" by Dr. OLLING "On the Nomenclature of Organic Compounds;" and by Dr. HARLEY "On Schönbein's Antozone." In the Physiological Section eight papers of interest were read, and the meeting was crowded throughout the day. Dr. ASHE, of Dublin, read one paper "On the Function of the Auricular Appendix of the Heart," and another "On the Functions of the Oblique Muscles of the Orbit." In the latter he attempted to prove that the action of the muscles alluded to was to regulate the focal distance of the eye. Dr. RADCLIFFE entered into the discussion, and remarked that he had published a paper in THE LANCET, in 1844, to prove that such was really their action, although he dif-

fered in opinion from Dr. Ashe as to the manner in which it was produced.

Dr. GIBB read a paper "On the Normal Position of the Epiglottis as determined by the Laryngoscope." He gave the results of his examination of 300 healthy persons with this instrument, the number of persons inspected at single sittings varying from one to twenty. In a certain per-centage he has discovered that the epiglottis takes an oblique or nearly transverse direction; and this has been most probably from birth, for he found it to be so in parents and their children. Persons subject to this position of the epiglottis were liable to great inconveniences and danger in the event of disease, and certain alterations in intonation were present: in them the interior of the larynx could not be seen with facility. When disease was present conjointly with a depressed epiglottis, the general suffering was remarkably great, and life rendered miserable; and in the majority of these cases he thought the position of the valve was congenital, and that in youth much trouble, risk, and danger were experienced in going through the diseases of childhood. It seemed to him that the determination of the position of the epiglottis was a matter of the highest importance to the welfare of the young, and that it should be ascertained at as early a period as practicable—say from six to ten years, as a safeguard against future evils, especially during the prevalence of epidemics.

Dr. EDWARD SMITH had not remarked the peculiarity referred to, and did not know that there was any muscle having a direct control over the direction of the free edge of the highly elastic fibro-cartilage. He referred to the co-ordinate elevation of the whole larynx with the depression of the free edge of the epiglottis in deglutition, and had observed that in cases of bronchitis the posterior wall of the pharynx is brought forward and puckered by contraction, which would give a different relative direction to the epiglottis, and also that the free edge in many cases of bronchitis is contracted in its transverse diameter. Both of these changes also interfere with the free passage of the air into the larynx. Dr. Smith begged of Dr. Gibb to show him cases in which the free edge of the epiglottis is much out of the erect position.

Dr. GIBB promised to show Dr. Smith several such examples, and by means of a black board he demonstrated the position of the epiglottis as described in his communication. He said these instances of depressed epiglottis could not be seen without the aid of the laryngoscope.

A paper was now read from Mr. JAMES DOWIE, being "Remarks on the Loss of Muscular Power arising from the ordinary Foot-Clothing now Worn, and on the Means required to obviate this loss." A pair of regulation army shoes were shown, and a pair with Dowie's improvement, which consisted in their possessing elasticity of the sole in front of the heel, partly through the agency of india-rubber, and in having the proper shape of the foot, thus differing from the army boots, which were straight in the sole and solid throughout. Very much discussion followed, including amongst the speakers clergymen, physicians, travellers, and others, who gave their experience as to which were the most comfortable boots to wear. The author's improvement was considered a good one by the majority of the speakers.

The Secretary then read a paper from Dr. BEALE, being "An attempt to show that every Living Structure consists of Matter which is the Seat of Vital Actions, and Matter in which Physical and Chemical Changes alone take place." This was illustrated by numerous coloured diagrams, and was not followed by any discussion in this rather popular audience. The next three papers, although of great value, were also read without any discussion of moment: "A Tabular View of the Relation which subsists between the Three Kingdoms of Nature with regard to Organization," by Dr. HENRY FREKE, of Dublin; "On an Albino Variety of Crab, with some Observations on Crustaceans, and on the Effect of Light," by Mr. R. GARNER; and "On the Termination of Motor Nerves and their Connexion with Muscular Contractions," by Prof. W. KUHNE, of Berlin. After explaining his views, which have been published elsewhere, Professor Kuhne defended them against the opposition of Kölliker and Beale. What they had described he had also seen, but they had not sufficiently distinguished motor from other nerves. They, however, could not have seen what he had described. The methods of investigation pursued by each probably explained the differences in the results. The author related some experiments showing that a muscular fibre could only be excited by a nerve entering *within* its substance, and others showing the inhibitory effect of a nerve upon the oscillatory contractions induced by directly irritating the muscular fibre.

Two other papers attracted much attention in other Sections: one "On the Civilization of Japan," by Sir RUTHERFORD ALCOCK; and another by Mr. FRED. PURDY, "On the Pauperism and Mortality of Lancashire."

Professor HUXLEY delivered an address "On the Objects, Condition, and Prospects of Biological Science," which, he said, involved one of the largest and at the same time most complete and well-defined provinces which had been selected for discussion by the British Association. All the great triumphs of biology were essentially modern, the majority of them being the products of the nineteenth century; but he thought they needed biological education in the primary schools, biological scholarships and fellowships in our universities and colleges, and museums so contrived as to educate the mind through the eye, and to furnish objects for investigation.

Mr. JOHN GIBBS read a paper "On the Inflorescence of Plants." He stated that characters taken from the inflorescence of plants are not only among the most elegant, but are also the most easy to be understood by persons having only a slight knowledge of botany. The subject introduced, he said, would take volumes to exhaust.

Professor ROLLESTON, of Oxford, read a paper "On the Difference of Behaviour which Certain Varieties of Starch exhibited when treated with Salivary Diastase in Saliva, and in the Shape of Infusions and Mixtures of Salivary Gland Substance." The following were the chief results:—

1. Inulin from the dahlia retains sugar with great tenacity, but, by repeated washing, it can be freed from this impurity.
2. When thus freed from sugar, it obstinately resists the converting influence of salivary diastase.
3. This salivary diastase was obtained from human saliva, and from parotid and submaxillary gland substance infused with water and buccal mucus.
4. The same salivary diastase instantly converted ordinary starch into grape sugar.
5. This salivary gland infusion, however, if made with salivary gland substance from young animals yet sucking, Dr. Rolleston had found to be ineffectual upon ordinary starch. Bidder's researches were in accordance with his.

These results led to the two following practical rules: 1. Artichokes are little likely to act as a substitute for the potato, as they contain inulin *vice* starch. 2. Starch foods are useless in the early months of infancy, as salivary diastase at such a period is inactive.

There were many very interesting papers read of which we can only mention the titles: Prof. HENNESSY read one "On the relative amount of Sunshine falling on the Torrid Zone of the Earth;" Prof. MASKELEYNE, one "On Meteorites," and another "On Aërolites from India;" Dr. STERRY HUNT, one "On the Nature of Nitrogen, and the Theory of Nitrification;" Mr. J. W. OSBORNE, one "On the Essential Oils and Resins from the Indigenous Vegetation of Victoria;" and Dr. H. H. PAUL contributed one "On the Manufacture of Hydro-Carbon Oils, Paraffin, &c., from Peat."

A paper that excited a good deal of interest among naturalists and geologists was one by Dr. FALCONER, "On the Ossiferous Caves in Malta, explored by Captain Spratt, C.B., R.N.; with an account of *Elephas Melitensis* (a pigmy species of fossil elephant) and other remains found in them." The author verbally gave the substance of it, and described the numerous specimens before him. In these caves bones were found which proved to be those of a species of elephant which, when full-grown, could not have been larger than a lion or a tiger. All the bones were firmly ossified; and when contrasted with those of the ordinary elephant, they were seen to be remarkably disproportionate in size. With these bones were found others of the young of this pigmy elephant; and when it is stated that the milk teeth of the young of this creature were somewhat larger than human molars, an idea can be formed of its small size. The tusk of the pigmy adult elephant was about a foot long. Interesting as this discovery was, it was rendered still more so by the announcement that in the same cave were found the bones of gigantic swans, three or four times larger than the present known swan; and also bones of a gigantic species of dormouse. The latter animal is usually known as a remarkably small creature, and the discovery of bones of such a large size as were found by Captain Spratt, probably of several species, took the meeting by surprise.

Mr. C. B. ROSE read a paper entitled "Notice of Fossilized Mammalian Remains from the Bed of the German Ocean." One by the Rev. J. DINGLE was also read, "On Specimens of Flint Implements from North Devon." Dr. DAUBENY exhibited flint implements from Abbeville and Amiens, and some

were produced by Mr. BONNY from the latter place. The papers, with that of Dr. Falconer, were all discussed together.

"On the Crocodiles of India and Africa, and on the Change of Form of the Head of Crocodiles," was the subject of a paper from Dr. GRAY. The following papers were also read:—"On Geoffroy St. Hilaire's Distinction between Catarrhine and Platyrrhine Quadrumana," by Dr. COLLINGWOOD; "On Marriages of Consanguinity," by Dr. GILBERT CHILD, of Oxford; "Report on the Human Remains found in the course of the Excavations at Wroxeter," by Mr. T. WRIGHT," and "The Geography of Bread-plants," by Mr. MICHELSEN.

Dr. EDWARD SMITH entered into "A Statistical Inquiry into the Prevalence of numerous Conditions affecting the Constitution of One Thousand Consumptive Persons when in Health," with a view to show whether any peculiarities exist in that class of the community, and to afford data of value to assurance offices. The inquiry was necessarily of great length, and embodied parental conditions, sex, age, &c. The investigation of this subject took place before the Section of Economic Science and Statistics.

"Tobacco in relation to Physiology" was the subject of a communication from Mr. T. REYNOLDS, who argued that pure saliva was necessary for proper mastication, which could not positively result when it was tainted with tobacco, which thus conveyed into the system a great deal of noxious matter.

Dr. JOHN DAVY communicated "Some Observations on the Vitality of Fishes as tested by Increase of Temperature," founded upon experiments made on eleven different species of fishes of our lakes and rivers. His results were, that a temperature of water between 86° and 100° was fatal to each kind; and that the *Salmonidæ* were those most readily affected by the elevation of temperature. These results proved that the accounts of travellers to the effect that fish exist in hot springs are exaggerated, and not founded on accurate observation.

Dr. DAVY also made "Some Observations on the Coagulation of the Blood in Relation to its Cause," and the results obtained by him in a series of experiments were opposed to the views of Dr. Richardson. Dr. Davy maintained that if we acted on Dr. Richardson's hypothesis in medical practice, it must be attended with risk.

Of the large number of other interesting and very valuable papers, of which the present meeting has been so prolific, we can only refer to the titles of the following:—"The Skull Sutures, and their Relation to the Brain," and "The Parasitic Origin of Pearls," by Mr. R. Garner; "The Fossil-feathered Animal (*Griphosaurus* of Wagner, *Palæopteryx* of Von Meyer) found in the Lithographic Slate of Poppenheim," by Professor Owen; Dr. Davy "On the Cultivation of Salmon Fisheries;" Professor Huxley's "Remarks upon the Natural History of the Herring;" Professor W. King, a "Notice of some Objects of Natural History lately obtained from the Bottom of the Atlantic;" "Some Observations on the Psychological Differences that exist among the Typical Races of Man," by Mr. Robert Dunn; and, lastly, a paper in French, by Monsieur Jules Gérard, the celebrated lion-killer, entitled "Exploration dans l'Afrique Centrale, de Sierre Leone à Algers, par Timbuctu."

The concluding general meeting took place on Wednesday, the 8th inst., in the Town Hall, when the list of grants was announced for scientific purposes, and the statement made that the next meeting would take place at Newcastle-upon-Tyne, under the Presidency of Sir William Armstrong.

THE

GREAT INTERNATIONAL EXHIBITION.

XV.

REPORT ON THE SUBSTANCES USED FOR FOOD EXHIBITED IN CLASS III.

THE food collection comprised in Class III. of the International Exhibition having been before the public a sufficient time to allow of a judgment being formed of its merits, and the awards of the jurors of that class having been announced, we shall now in our turn place on record the opinions arrived at by ourselves, based upon a careful examination of that collection.

When the part taken by us for a long series of years in relation to food is remembered, the adoption of this course will be regarded as but one of the legitimate results of our previous labours, and that we shall bring to the correct performance of the task unusual and special qualifications derived from a large experience will, we believe, be readily conceded.

The remarks we shall make, and the opinions we shall announce, will be based, in nearly every case, not merely upon a deliberate and careful inspection of the case of each exhibitor, but also, whenever requisite, upon the examination and analysis of the articles exhibited.

The various articles comprised in Class III. under the heading "Substances used for Food," are divided into three sections or sub-classes: A, Agricultural Products; B, Dry Saltery, Grocery, &c.; and C, Wines, Spirits, Beer, and other Drinks, and lastly, Tobacco. This arrangement we do not propose to follow; and we take exception to the classification of tobacco as an article of food. This medicinal plant and its manufactured products would have been more legitimately and naturally placed amongst the other narcotics in Class II.

We find that these three sub-classes or divisions comprise 157 exhibitors: of whom 40 belong to Section A, 88 to B, and 29 to C. The first section includes the names of many exhibitors of grain and seeds of various kinds, of hops, hay, grasses, &c. Although these articles are of great importance, and very properly placed in this class, any notice of them in this journal would be somewhat out of place, and would tend to extend these reports to an unnecessary length. We must leave, therefore, the discussion of the merits of such products, excepting only Hallett's Pedigree Wheat, on account of the physiological principle involved in its cultivation, to the more appropriate sphere of the agricultural press.

Before proceeding to details, we desire to refer to some of the considerations which, in connexion with the system of awards which is now being so much canvassed, require to be kept in view.

No conclusions can be safely formed by the public, from the awards made in this class, as to the character of the goods sold under ordinary circumstances in the usual course of trade, by the recipients of such awards.

As a rule, the exhibitors show the very best articles they are capable of producing and of manufacturing, excluding all such as are either not genuine or are of inferior quality, it by no means following that they sell to their ordinary customers articles of similar excellence; and therefore these awards will no doubt be the means, in many cases, of giving rise to false ideas and of misleading the public.

Some exhibitors do, indeed, display the articles in the condition in which they sell them to the public, but this is by no means the rule.

Others, again, show, not the best articles they can procure or make, but such only as they can supply at a certain price.

Further, it should be remembered that the awards usually apply only to some one article or class of articles, or even to some one quality possessed by such articles, as purity or excellence of manufacture. Now, there is no doubt but that the public in general, who have neither the time nor the opportunity to acquaint themselves fully with the details of such awards, will consider that they apply generally to the trader's goods, and are to be taken as a guarantee of general excellence and superiority.

These objections to the awards are, in their nature, general; we shall hereafter refer to some which are more special.

We shall notice, in the first place, all the *farinaceous articles* of food exhibited.

WHEAT.

Mr. Hallett, of the Manor House, Brighton, exhibits his now world-renowned and appropriately-named "Pedigree Wheat," "bred" on the same principle of repeated selection which has produced our pure races of animals.

Some years since the idea occurred to Mr. Hallett—and this was a very natural as well as soundly scientific and philosophic idea—that if a seed of any kind, as, for example, a grain of

wheat, were selected on the same principles as a horse or other animal is chosen for securing superiority of breed and race, the result would be similarly successful. This idea Mr. Hallett proceeded to put to the test of actual practice, and the results have been truly astonishing.

In 1857 Mr. Hallett started on his experiments with two ears, containing together 87 grains. Of these, 1 grain produced 10 ears, containing from 79 to 55 grains per ear, the aggregate yield being 688 grains. In 1858, 1 grain from the ear containing 79 grains produced 17 ears, besides 5 green ones, containing 1190 grains, varying per ear in number of grains from 91 to 55. In 1859, 1 grain from the 91-grain ear produced 39 ears, containing 2145 grains. Other 1188 grains produced by the 15 ears, the yield of which ranged between 91 and 55 grains per ear, produced 1¾ bushels on 698 square feet, or 13¼ quarters per acre; while 1 grain from the 55 grain ear produced 15 ears, containing 1086 grains. In 1860, two ears were selected from a "stool" on account of the *number* of its ears, and which contained 2145 grains. Of these two ears, one contained 74 and the other 71 grains. One grain from the 74-grain ear produced 52 ears. The other "stool" selected on account of the *contents* of its ears contained 1086 grains, varying from 87 to 61 grains per ear. One grain from the 87-grain ear produced 24 ears, containing 1909 grains, varying per ear from 123 to 50 grains.

Thus by means of repeated selection *alone* the length of the ears has been doubled, their *contents* nearly trebled, and the "tillering" powers of the grain increased fivefold. Mr. Hallett states that twelve years' continued investigation has matured in his mind the conviction that his system of the cultivation of wheat "is of the greatest national importance, and that by it Great Britain may yet grow enough wheat to feed her people."

Notwithstanding these results, little short of marvellous, Mr. Hallett has neither received honourable mention nor has he been awarded a medal, which ought most certainly to have been accorded him.

FLOUR.

The most important farinaceous article exhibited is of course wheat-flour, as of it bread, pastry, biscuits, &c., chiefly consist.

Of the constituents of wheat-flour the most important is the flesh-producing constituent, gluten; this varies greatly in amount in different kinds of wheat.

The flour ordinarily sold by millers is a mixed flour, and consists not of the produce of one description of wheat, but of two or more kinds mixed, usually of English flour and foreign barrel flour, American or French. By this means, while the millers run the risk of introducing a portion of alum into their flour, they succeed in obtaining a flour of more uniform quality and composition.

Now the fact cannot be held too constantly in remembrance, that the outer and coloured portion of the grain contains a larger proportion of gluten and oil than the softer interior portion, in which the starch is in greater relative amount. Hence it follows that highly dressed flour, though more suitable for making white bread, is less nutritious and fattening than one less dressed.

The article wheat-flour is represented in Class III. by three exhibitors—Mr. Adkins, Mr. Chitty, and Mr. Christie.

Mr. Adkins, of Wallingford, exhibits some *English Flour*, manufactured by Callard's patent process; Callard and Bowser's *Prepared Farinaceous Food*, and *Biscuits* made by Mr. Bonthron from what Mr. Adkins calls *English Gruau Flour*, also prepared after Callard's process. He likewise exhibits some of the *Gluten* abstracted from the flour by that process, as well as *biscuits* prepared with the gluten by Mr. Bletchley.

The patentee of the process referred to maintains that there is in many wheats—as in Egyptian and Black Sea wheats—an excess of gluten for bread-making purposes; and he affirms, supporting his opinion with many striking facts and arguments, that this excess of gluten is the main difficulty in the manufacture of bread of the best quality, and which, while it is of a good colour, shall at the same time be light, porous, and digestible. His process therefore consists in the removal of the gluten from a portion of the flour, the flour thus treated being added to and mixed with the original flour, the per-centage of gluten being thereby reduced, if the flour be intended to be used for bread-making, as nearly as possible to 9½, and if for pastry and biscuits, to 8½ per cent.

The principal facts cited by Mr. Callard in support of his views are—that the whitest and best bread is made with flour which does not contain a large proportion of gluten, and that when a flour rich in gluten is used, the bread is always of a darker colour and heavier; that when he abstracts from flour containing much gluten a certain portion of that constituent, he is enabled to make with it a loaf which for lightness and colour resembles that made from flour naturally less rich in gluten.

It is obvious that this proceeding of abstracting from wheat-flour a portion of that which is deemed to be its most important component must be regarded in two aspects—namely, the manufacturing and the dietetic; that is, in its effects upon the physical characters and qualities of the bread made with flour thus treated, and in its bearing upon the nutritive properties of the bread.

That a bread made from flour which is not very rich in gluten is whiter and lighter than one made from highly glutinous flour there appears much reason to believe; but whether it is equally nutritious or not is a matter which at present must be regarded as at least extremely doubtful.

Moreover, if it be necessary that the flour used for making the whitest bread should be, as respects its gluten, of uniform and standard strength, the same results as are obtained by Mr. Callard's process may to a great extent be secured by the mere blending together of flours of different degrees of strength, as, in fact, is now largely practised by millers.

If the whole of the gluten abstracted from the richer flours by Mr. Callard were restored to the weaker flours, there would then on the entire consumption be no loss to the consumer of this invaluable constituent; but the fact is that if this process were to be extensively adopted there would be an abstraction to an enormous extent of gluten from the wheaten flour used in this country, and what is now believed to be the nutritive standard of the article would in consequence be greatly lowered.

Although we shall not undertake to pronounce an authoritative opinion on the subject, it yet does strike us as somewhat extraordinary that wheat too rich for bread-making purposes should ever be produced, and that it is a right and safe thing to remove from wheat-flour any portion of that constituent which plays so important a part in nutrition, and upon which its value is usually supposed so much to depend. Remember the question of the production of a very white and light loaf is a very distinct one from that which is the most nutritive; the loaf which contains the most or the least gluten.

If the bestowal of a medal upon Mr. Adkins for the flour exhibited by him, and prepared by Callard's process, is to be taken as conveying an authoritative opinion in favour of such a proceeding, the jurors have certainly gone very much further than we believe to be justified by the facts of the case as they at present stand.

The article denominated "English Gruau" by Mr. Adkins, is not gruau at all, but is a flour prepared in imitation of it. It simply consists of flour from some five or six per cent. of which the gluten has been abstracted by Callard's process, the remaining starch being retained, and the result being to diminish the amount of gluten in the whole bulk of flour, and to increase relatively that of the starch. It is true that in the French gruau there is less gluten and more starch than in ordinary flour, and so far the flour thus treated by Mr. Adkins will no doubt be found to answer many of the purposes for which the true gruau is used. Mr. Adkins can, we believe, sell this description of flour at 62s. per sack, while the French gruau costs about 83s.

Of the surplus gluten resulting from this process, a portion is used by Mr. Bletchley, of Oxford street, for the manufacture of the gluten biscuits, already mentioned. These are extremely well made, very palatable, and are stated not to contain more than one or two per cent. of starch.

Two descriptions of flour are prepared by English millers—"Whites" and "Households;" and of these again there are two or more qualities. The "best whites" are used chiefly for pastry and for cottage and small bread. The "households" is the staple of which the ordinary square or cubical bread is made.

In France there is a kind of flour much used, termed "Farine de Gruaux," but which until recently was unknown as an English manufacture in this country. It is used for pastry, and for bread where price is not an object. It consists solely of the central, soft, and farinaceous portions of the grains of wheat, the term "gruaux" signifying grits or groats, the grains being reduced to these previous to being ground. It is to this article that the whiteness, lightness, and delicacy which have made French bread so celebrated are mainly due.

Mr. Edw. Chitty, of Guildford, exhibits some "best whites" wheaten flour, as also some English-made "farine de gruaux." For quality it would be difficult to surpass the "best whites;"

but it is as an exhibitor of the "farine de gruaux," of which he is the first and only English maker, that Mr. Chitty is chiefly distinguished. Hitherto the manufacture of this quality of wheat-flour has been confined to France. Mr. Chitty, with laudable enterprise, has gone to the expense of having machinery constructed adapted on French models to the manufacture of this description of flour. The result has been most successful and encouraging. Mr. Sapsford, of Queen Anne-street, has recently submitted to us some bread made entirely of this flour, and certainly its whiteness and delicacy were surprising. For ourselves, we have never seen any bread in this country equal to it. Mr. Sapsford informs us that bread of this quality might be supplied at about 10*d.* per loaf. Consisting as it does entirely of the central portions of the grain, this flour is necessarily a costly article; the best "households" may be purchased for 51*s.* per sack, while the English-made "gruaux" is worth 75*s.* per sack.

Mr. Chitty has received neither honourable mention nor a medal; indeed the seals upon the two bags intended expressly for the jury were not even broken, so that the flours exhibited by Mr. Chitty underwent no proper examination at all. It is true his case contained two small dishes of flour—one of the "best whites," and the other of the true English-made "farine de gruaux;" but these, after two months' exposure to the light and sun which pour in from the roof, ought not to have been examined at all, since their condition could not fail to be injured by such exposure. Mr. Chitty has therefore good reason for complaint, and he was doubtless fully entitled to the award of a medal, as the first English maker of the celebrated "farine de gruaux."

Mr. William Christie, of Chelsea, exhibits a series of samples illustrative of the process of the manufacture of flour from the whole grain, including samples of Chidham and of Red Nursery Wheat, as well as of the bran, fine and coarse pollard, fine and coarse middlings, and of the meal taken from these, and lastly of the flour made therefrom.

The Chidham Wheat shown is a fine sample, and was grown in Middlesex. The flour made from it does not contain a large amount of gluten, and is best when a year old.

The Red Nursery Wheat was grown in Berkshire, and is a long-grained wheat, and the flour prepared from it is stronger in gluten.

The sample of flour made from the Chidham wheat, which was that examined by us, was certainly very fine. Mr. Christie has received a medal for "Excellent Wheaten Flour."

Correspondence.

"Audi alteram partem."

THE DRAINAGE OF BRIGHTON.

To the Editor of THE LANCET.

SIR,—Though I am sure that the public generally, as well as the inhabitants of Brighton themselves, are much indebted to you for the very able way in which you have from time to time pressed upon the latter the necessity of completing the sanitary improvements which the town stands so much in need of, and more particularly of carrying out some efficient plan of drainage, I cannot but think that you have been misinformed respecting the probable effects which will result from draining into the sea, in the event of the inhabitants being compelled to adopt this course, and which, by exciting popular prejudice against it, may injure the town, and hamper the authorities.

The plan proposed by Messrs. Wright and Maclean, of carrying the whole of the sewage of the town eastward, and discharging it into the sea beyond Rottingdean, is, there cannot be a shadow of doubt, the one of all others which the authorities should make every effort to carry out. To have the whole of the sewage conveyed clean away several miles from the town, thereby preserving the sea in front of it from every suspicion of impurity, is, so to speak, worth any sum of money to a place like Brighton, which for the future must depend for its prosperity upon the estimation in which it is held by the public for cleanliness and salubrity. But, unfortunately, this plan is not so easy of accomplishment as some people would have us believe. Setting aside the legal difficulties attending it, and the expense, which latter, however, ought not for a moment to be considered, some portions of the town lie so low, that if the main sewer running eastward is to drain the whole of the town, the fall will be so slight that it is a question whether it will not partake more of the characters of an extended cesspool than of an efficient drain. This is a question which engineers alone can decide; but supposing, from this or any other cause, it is not thought advisable to adopt this plan, or to make a sewer under the beach to the east of Kemp-town, as advised by others, there remains but one other way of draining the town, which is by carrying a sewer from the Albion out-fall straight into the sea; for the idea of inland drainage for a place like Brighton, surrounded by hills, is too chimerical to require a moment's consideration.

Setting prejudice aside, and taking all things into account, it is a question whether this plan of draining straight into the sea is not both the best and the cheapest which the town can adopt. A large iron pipe imbedded in the chalk and carried a long distance into the sea (and I am informed that, by means of diving-bells, practically, there is no limit to the extent to which this might be carried out) would discharge the sewage into deep water, where it would meet with the currents formed by the tides, which would quickly carry it away from the front of the town. Whether the sea opposite the town would be appreciably affected by the sewage thus thrown into it, is a question which certainly may admit of some doubt; but that there would be any exhalations thrown off from the surface of the sea that would in any way injuriously affect the atmosphere of the place I cannot for a moment believe. This is the opinion of Dr. Letheby, who has told us that he does not believe that draining into the sea in front of the town will injure the salubrity of the atmosphere, though, in order to avoid popular prejudice, he advises the authorities to carry the drainage eastwards.

Permit me, in conclusion, to say a few words respecting the reports which have of late become so rife of the salubrity, or rather insalubrity, of Brighton. No one, I am sure, who knows anything of my antecedents will for an instant accuse me of attempting to conceal any real defect which exists in the town. That Brighton, taking into account the nature of the place, is very deficient in its sanitary arrangements—that the inhabitants and authorities are still very far from possessing a due appreciation of the necessity there exists, if the place is to regain its former popularity, of making it as perfect as art can make it, I am willing most readily to acknowledge. But at the same time, I am equally certain that these reports of the prevalence of epidemics and disease at Brighton have been gross and ridiculous exaggerations; for instance, when Mr. Acton wrote his letter about Brighton in the autumn of 1860, the effect of which was to frighten people away from the place like a flock of crows, at no former period probably had it ever been in a more healthy state. Though there had been an increase in the population of the town of upwards of 13,000 since the year 1851, the deaths in the autumn of 1860—the period of Mr. Acton's supposed epidemic at Brighton—were fewer than they had been for nine years previously. Beginning from 1860, according to the Registrar-General's Returns, the deaths for the autumn quarters were—342, 423, 448, 399, 356, 356, 437, 353, 348, and 447.

I am, Sir, your obedient servant,

WILLIAM KEBBELL, M.D.,
Physician to the Sussex County Hospital.

October, 1862.

THE PRELIMINARY EXAMINATION AT THE COLLEGE OF SURGEONS.

To the Editor of THE LANCET.

SIR,—I wish to state very briefly in your columns an act of injustice which I consider has been committed by the Royal College of Surgeons of England. Many of your readers may have suffered in a similar manner, and therefore publicity is all the more to be desired.

I have this session entered my son at an hospital in London, the regulations of the Medical Council requiring a preliminary examination *prior to such entrance*. I addressed a few questions to Dr. Hawkins, the Registrar, who, in his reply, stated that "he was directed by the Medical Council to refer inquiries such as those which I had addressed to him to the qualifying body—namely, the University, or College, or Hall by which students are in each case to be registered and subsequently examined."

So far so good. My son goes up to register, in the first instance, at Apothecaries' Hall, having previously passed there the examination in Arts. He then makes application at Lin-

coln's-inn fields, but, alas! makes the discovery that there is no reciprocity on the part of the College of Surgeons towards Apothecaries' Hall; so that he has to encounter *two ordeals*. Now, this is not only capricious on the part of the College, but arbitrary in the highest degree, as Apothecaries' Hall recognises the preliminary examination passed at the College.

The authorities there must be brought to reason in *this matter* by the Medical Council as imperatively as on a former occasion.

I am, Sir, your obedient servant,

October, 1862. JUDEX.

AN INTERESTING PATIENT.

To the Editor of THE LANCET.

SIR,—I am attending a relic of the Johnsonian period. In Boswell's "Life" he frequently mentions Mauritius Low, the painter; and in the codicil to the will of the Doctor a bequest of £100 is left to each of Mr. Low's children, who were Johnson's god-children. My patient is Miss Low, one of these. She lives at New Cross, and is a very intelligent old lady. Her house contains some capital paintings of her father's, and also a handsome bookcase (for the period), an old desk, and other relics of Dr. Johnson. This desk she asserts to be the one on which the dictionary was written.

My object in writing this is not to seek the aid of the benevolent, for I am happy to say she is in very good circumstances, but simply to make public a fact so interesting.

I remain, Sir, yours very truly,

Bedford-place, Old Kent-road, Oct. 1862. H. J. SCOTT, M.D.

THE OUTBREAK OF SMALL-POX IN SHEEP.

ON Monday afternoon the introductory address to the forthcoming session of the Veterinary College, Camden Town, was delivered by Professor Simonds. The address was in great part taken up by observations on the recent outbreak of small-pox in sheep. Since the outbreak occurred the professor has had a great deal of personal professional experience in dealing with the disease; his statements therefore excited much interest, and were listened to with the closest attention.

Professor Simonds, after some introductory remarks, said that, as small-pox was unhappily still so familiar and deadly among the population of this kingdom, the youngest tyro in medicine was in some measure acquainted with the disease. The allied disease in sheep was less familiarly known, but it was more fatal. Before the year 1847 the malady had never, during the present generation, been observed among the flocks of this kingdom. It had long, however, been prevalent and well known in several of the great sheep districts of the Continent. In some districts the affection was, so to speak, naturalized; in others it had shown itself from time to time in wide and disastrous outbreaks. Within historic periods the disease had probably never appeared among healthy flocks unless there had been prior communication immediately or recently with animals suffering from the affection. One sheep would infect a flock; a flock would infect a district; and in this way the malady would be spread over the area of a vast country. So it had happened once and again in France, Germany, and Central Europe. But while the communication of sick with healthy animals might be said to be an essential element in the propagation of small-pox, yet it was seen that this could not be the sole element. For now the disease had been observed to break out in one or two scattered instances, and then would break out with a malignity which almost set control at defiance. At one time the flocks showed a higher susceptibility to the disease than at another. This consideration entered largely into the question of prevention. In the case of human small-pox we possessed a simple, efficacious, and almost harmless means of prevention in vaccination; but it was not so in the case of small-pox in sheep. Vaccination afforded them no protection. Where the separation of the affected animals from the healthy ones proved insufficient to stay the disease, there remained only inoculation to be had recourse to. Nothing was more efficacious than this for securing the ultimate welfare of the flock. He could well understand why so great an authority as Dr. Copeland should, on account of the greater protective power of inoculation, express something like a regret that in this country it was prohibited for man. Dr. Copeland apparently doubted the greater value of vaccination as a protection against small-pox. Of the justness of this doubt he (Professor Simonds) expressed no opinion; but he thought it well that it should be alluded to at a time when the events in Wiltshire had led to so much discussion on the question, and when the fact of the prohibition of inoculation for man had been used as an argument for prohibiting it in the case of sheep. It had been forgotten by the objectors that in the case of sheep we had no option between vaccination and inoculation. Wide and extended experience had shown that vaccination was valueless as a protection against small-pox in sheep. Wider and more extended experience had, on the other hand, shown the great value of inoculation in mitigating the severity of the disease. After quoting at great length Dr. Copeland's argument in favour of inoculation, Professor Simonds went on to say that small pox first appeared among the flocks of England in 1847. It had been introduced by foreign sheep sold in Smithfield Market. The disease spread rapidly, and committed frightful ravages in several counties during the years 1847-48-49 and 1850. Since 1850 the malady had not been heard of among our flocks until the months of July last, when it broke out at Allington, near Devizes. The disease soon spread, and neither the shepherds nor the proprietors were satisfied as to its real nature until his (the Professor's) aid had been sought, and at that time many animals had been lost. The introduction of the disease into Mr. Parry's flock was still left in uncertainty. This point might, however, be in some degree at least cleared up by subsequent investigations. The important thing to be noted was, that the disease quickly spread to neighbouring flocks, and subsequently extended to Berkshire. At the present moment there was good hope, thanks to the preventive measures adopted, that the malady had been stayed in the vicinity where it had first showed itself; but as yet it would be premature to express any decided opinion on the probable further course of the outbreak. The nature of the disease and the period of the year alike forbade a hasty conclusion in the matter. He trusted that the malady was stayed, but he could not conceal from himself the probability—a probability taught by bitter experience—that the disease might still spread more widely, and that our flocks might ultimately suffer from as calamitous a visitation as that which befell them in 1847-50. The Professor then, at some length, discussed the economical and social aspects of the question.

Medical News.

APOTHECARIES' HALL.—The following gentlemen passed their examination in the Science and Practice of Medicine, and received certificates to practise, on the 2nd inst.:—

Bailey, William, Tipton, Staffordshire.
Clarke, Caudell, Wymondham, Norfolk.
Eilis, Edward Holberton, St. Bartholomew's Hospital.
Griffith, William Hughes, Southampton.
Hunt, Albert Dunning, Chagford, Devon.
Lavin, Peter John, Bushey, Herts.
Meacham, Edward, York-street, Cheetham, near Manchester.
Russell, Charles Martin, Monmouth-road, Westbourne-grove.
Smith, Cleveland, Thornton-street.
Whitehead, John, Trinity-square, Borough.

THE NUMBER OF DEAF AND DUMB PERSONS IN EUROPE is about 250,000.

MINERAL WELL AT AUCHTERARDER.—A mineral well has been discovered by Dr. Forbes at Auchterarder, N.B.

LEEDS INFIRMARY.—It is intended to lay the foundation stone of the new infirmary at the end of the present month.

THE MORTALITY IN LONDON, according to the Report presented on Tuesday last to the Commissioners of Sewers, was greatly below the average of the season.

SURREY COUNTY HOSPITAL.—The committee for establishing the Surrey County Hospital at Guildford are prepared to receive plans for the erection.

THE LUDGATE-HILL TRAGEDY.—Mrs. Vyse has, by order of the Secretary of State, been removed from Newgate to Fisherton House Lunatic Asylum, near Salisbury.

PATHOLOGICAL SOCIETY OF LONDON.—The first meeting of this Society for the session 1862-63 will be held at the rooms in Berners-street, on Tuesday evening, the 21st inst., at eight o'clock.

NEW HOSPITAL AT BIRKENHEAD.—Mr. Laird, M.P., has contracted with Mr. Hogarth, builder, for the construction of the new hospital at Birkenhead. The building will be immediately commenced.

MONUMENT TO SIR HUMPHRY DAVY.—A monument is about to be erected to the memory of Sir Humphry Davy on the north side of Mount's Bay, near Penzance, where he was born.

COUNTY DOWN LUNATIC ASYLUM.—In accordance with a resolution passed at the last Assizes, plans for a new lunatic asylum for the county of Down are invited by the committee for competition.

MIDDLESEX HOSPITAL.—The tabular list of medical officers of the Middlesex Hospital, in the Students' Number of THE LANCET, should have included the name of Mr. Soelberg Wells as Ophthalmic Surgeon.

HEALTH OF NEW ORLEANS.—"Up to the last accounts," says the *New York Herald* of Sept. 20th, "not a single case of yellow fever has been reported in New Orleans. The health of the city has, in fact, never been so good as during the present summer."

NORTH STAFFORDSHIRE INFIRMARY.—The committee of the North Staffordshire Infirmary are prepared to receive complete sets of designs for a new infirmary to be erected at Hartshill, near Stoke-upon-Trent, at a cost not exceeding £12,000 for the entire building.

QUARTERLY RETURN OF DEATHS IN LONDON.—In the quarter ending Sept. 27th, 15,133 deaths were registered in London; of these 8184 were under twenty-one years, a large portion having died in infancy. 413 persons were eighty years old and upwards.

SUMMER MORTALITY.—In the two seasons of 1851 and 1852, the mean temperature being 60·4° and 58·7° respectively, the deaths were about 15,000 in each season. In 1859, with a temperature of 62·9°, the deaths were 16,000; in 1860, when the temperature decreased to 56·8°, the deaths were only 12,916.

SMALL-POX IN SHEEP. — A correspondent of the *Reading Mercury* says that fifteen years ago he had about 100 sheep attacked with this disease, and by keeping them in a perfectly dry place, feeding them upon oatmeal gruel, and giving Epsom salts, he effectually cured them, losing only one out of those infected.

COMFORTS FOR GARIBALDI.—Mr. Alderman, of Soho-square, has just transmitted to Spezzia, for the use of the wounded liberator of Italy, a couch specially adapted to his present condition. It abounds with contrivances for alleviating the pain of the sufferer, and is of highly-finished workmanship. It is also accompanied by a reading, writing, or dining-table, which the illustrious invalid can use without rising from his couch.

JAPANESE REMEDY FOR SEA-SICKNESS.—A Cronstadt journal states that the Japanese ambassadors all suffered from sea-sickness in going from Swinemunde to St. Petersburg. The first ambassador, in particular, was exceedingly ill, notwithstanding the strange remedy he employed, which consisted of soup made of horse-radish and rice, seasoned with red herrings and sardines cut into small pieces. When eating this singular compound he took a little champagne after every spoonful.

YELLOW FEVER.—At the Havannah, according to the newspapers published there, the yellow fever continues to be very prevalent. The losses, as given by those papers, on board the European shipping, and especially among the French crews, are enormous, if correctly stated. The *Opinion Nationale* urges the French Government to publish, in order to remove the uneasiness felt by families, any information of a more exact and satisfactory nature which it may have received thence.

SURGICAL INSTRUMENTS IN 1862.—The jury of Class XVII. has issued its report on surgical instruments, which is from the pen of Mr. Seymour Haden. It is a valuable though brief document, which will be generally referred to as affording an interesting and able *catalogue raisonnée* of the instruments displayed. Mr. Haden is only able, in this official report, "to indicate the more prominent additions," and refers for fuller information to the reports in this journal and elsewhere.

ARMY MEDICAL SCHOOL, CHATHAM.—The fifth session of the Army Medical School was opened on the 1st of October by an introductory address from Dr. Parkes, F.R.S., the Professor of Hygiene, at Fort Pitt. The lecture was attended by Major-General Eyre, Commandant of Chatham; Colonel Gordon, A.D.C.; the colonels commanding the various corps in the garrison; Dr. Hawkins, the Provost of Oriel College, Oxford; Dr. Forsyth, C.B., the late Director-General of the Indian Medical Department; Sir Ranald Martin, C.B.; Archdeacon Robinson, the Master of the Temple; Inspector-General Anderson, P.M.O. of Chatham; Professors Longmore, Maclean, and Aitken; Inspector-General D. Macpherson, of Madras; Captain Fanshawe, C.B., Commandant of the Dockyard; the principal civil practitioners of Rochester and Chatham; and a large number of naval and military medical officers. The discourse (which we publish *in extenso* in our present number) occupied nearly an hour, was delivered without the aid of any reference to notes, and kept the audience (comprising, as it did, distinguished members of various professions) in earnest attention from its opening to its close. At the close of the address, General Eyre, in the name of the assembly, thanked Dr. Parkes for the eloquent and forcible elucidation of his subject, so vitally important as it was to the well-being of the army and the State at large. He expressed a hope that the interest he had excited would not be allowed to be limited to those who had then listened to him, but rather that it might be diffused, and the good his appeal was calculated to lead to further assured by publication for general perusal and study. The officers of the medical staff entertained a large number of guests at luncheon on the occasion in the large mess-room at Fort Pitt.

ROYAL COLLEGE OF SURGEONS.—From the annual report of the receipts and expenditure of this institution from Midsummer-day, 1861, to Midsummer-day, 1862, and just published, it appears that the former amounted to £14,135 13*s.*, derived principally from the following sources:—Primary and pass examinations for the diploma of member, £11,429 15*s.*; rent, £697 2*s.* 6*d.*; fellowship, £451 10*s.*; classical examination for membership, £180; certificates in dental surgery, £126; licences in midwifery, £99 15*s.* The disbursements amounted to £14,290 7*s.* 6*d.*, being an excess of £154 14*s.* 6*d.* over the receipts.

CARBONIC ACID GAS, AS AN ANÆSTHETIC, has been employed by M. Ozanam. He mixed three parts of the gas with one part of atmospheric air in a large india-rubber bag provided with a flexible tube and a mouth-piece, by which the patient inhales the mixture. Anæsthesia is stated to be produced in about two minutes; it is accompanied by acceleration of the respiratory movement and copious perspiration on the face. The moment the inhalation is stopped the patient awakes to perfect consciousness.

HANTS NEW COUNTY HOSPITAL, WINCHESTER.—A special Court of Governors was held on Friday last. The meeting adopted the report of the building committee, which recommended the purchase of land on the Romsey-road for the site of the new building. The whole sum to be paid for the ground (in two lots) is £2225. In consequence of the distance of the hospital from the city, a dispensary is to be provided for out-patients in some portion of the present hospital, in accordance with the wishes of some of the influential medical officers of the institution.

RANK OF MEDICAL OFFICERS IN THE AMERICAN ARMY.—The highest grade of assimilated rank attained by the medical officers in the United States service is a colonelcy; but it is proposed to give the Director-General the rank, pay, and emoluments of a Brigadier-General; the Sanitary Inspector-General to rank as a Colonel of Cavalry; a first-class surgeon as a Major of Cavalry; a second-class surgeon as a Captain of Cavalry; and an assistant-surgeon as a First Lieutenant of Cavalry.

AGREEMENT NOT TO PRACTISE: YOUNG *v.* EMERSON.—A case has recently been tried at the County Court, Sandwich, Young *v.* Emerson, in which the plaintiff agreed to assist the defendant, a medical practitioner there, at a salary of £100 per annum, with one month's notice, his services to commence on the 8th of September. Defendant subsequently requested plaintiff to sign a bond against practising on his own account, which he refused to do. When plaintiff went to the surgery to commence his duties the defendant called on him for his signature to the bond, which he refused, and was consequently dismissed. The present action was brought to recover a month's salary, £8 6*s.* 8*d.* For the defence it was alleged that the signature of the bond was an essential part of the contract, and that not having been given, the agreement was void. His Honour decided that, under all the circumstances of the case, he should be doing justice by awarding a payment of £5 to the plaintiff in lieu of notice.

DURATION OF LIFE IN SWEDEN.—From official details just published it appears that the average duration of life in Sweden during the eighteenth century was thirty-four years for men and thirty-seven for women; it is now forty-one and forty-six respectively. This is not owing to any great tendency to longevity, but rather to a diminution of deaths in the earlier stages of life, since only three-twentieths of the number of infants born die in the first year of their existence. Among the causes which have tended to increase the average of life in Sweden vaccination holds the first rank. A hundred years ago one-seventh of the deaths were attributable to small-pox, while now there is scarcely one death in a thousand owing to that disease.

NEW TRANSFUSION APPARATUS.—At a meeting of the Edinburgh Obstetrical Society, Dr. Hamilton exhibited an apparatus which he had contrived for the performance of transfusion of blood after any considerable hæmorrhage. It consists of a funnel for receiving the blood, say four inches broad at the mouth, with a stop-cock attached to it, and of an india-rubber tube, two feet long, for connecting the two. In operating with this instrument Dr. Hamilton proposes that the patient should be placed at a lower level than the person from whom the blood is to be drawn, so that we may have—1st, the force of gravitation to impel the blood forward; and 2nd, that we may thus effectually provide against the entrance of air into the veins, as the air, being the lighter body, must always keep on the surface. The instrument is simple in construction, and can be applied with great facility.

ALLEGED FATAL MISTAKE AT THE ROYAL DISPENSARY.—Dr. Lankester held an inquest at the Prince of Wales Tavern, Sudely-street, City-road, on Monday, on the body of a child whose death was alleged to have been caused by an overdose of cough mixture. But on a post-mortem examination it appeared that death had been caused by congestion of the brain from a convulsive fit. The labels on the bottles had, however, been written indistinctly and in pencil, so that a tablespoonful of one medicine, and a half tablespoonful had been given, instead of a teaspoonful and a half teaspoonful. Verdict accordingly, accompanied by a recommendation to greater care in labelling medicines.

MEDICAL ACADEMIC COSTUME OF THE UNIVERSITY OF ST. ANDREWS.—The cap and gown for Bachelors and Doctors of Medicine are to be similar to those worn by Masters of Arts at Cambridge. The gown may be made of silk or stuff, at the option of the wearer. The hoods are also to be of the same stuff as the Cambridge hoods, but of distinctive colours and materials. The M.B. hood may be made of either black silk or stuff, with an edge of purple silk two inches wide inside and outside. The M.D. hood, which is very handsome and elegant, is made of purple cloth, and lined with rose-coloured silk.

PROPOSED REFORMS IN THE FRENCH METROPOLITAN ASYLUMS.—In 1860 a commission was instituted by the Prefecture of the Seine to inquire into the ameliorations and reforms requisite in the provisions for the care of lunatics in the Department. The report has recently been drawn up and presented by M. Ferdinand Barrot. The report, after describing the defective state of the present system, proposes that a new central asylum shall be built serving as a model for others throughout the country; that the management of these asylums be vested in the Government of the Department; that the administrative and medical authority be vested in the same person when possible; that employment be provided for the patients, especially in the open air; that boarding-houses be established in connexion with the asylums, though the treatment of all persons at their own homes is recommended when there is no risk of public annoyance.

DR. BURNES, LATE PHYSICIAN-GENERAL AT BOMBAY.—We regret to learn the sudden death of Dr. Burnes, which took place at Manchester a few days since, while on his wedding tour. He was elder brother of the late Sir Alexander Burnes, who fell at Cabul in 1841, and himself formerly held the post of Physician-General at Bombay. Dr. Burnes, who was known in the literary world as the author of "A Visit to the Ameers of Scinde," was a magistrate for the counties of Forfar and Middlesex, and was one of the most active of the visiting justices of the lunatic asylum at Hanwell. He received the Hanoverian Order of Knighthood in 1837. By his first wife, who was a daughter of the late Major-General Sir G. Holmes, K.C.B., he had issue several sons, the eldest of whom fell in the Indian mutiny, where he lost his life in an heroic effort to rescue a little English child. This event is commemorated in a handsome painted window, lately executed for Dr. Burnes's native city of Montrose.

MEDICAL VACANCIES.

THERE is a vacancy in the Surrey County Lunatic Asylum for an Assistant Medical Officer.

AN Assistant House-Surgeon and Dispenser is required for the Royal Portsmouth, Portsea, and Gosport Hospital.

A vacancy has occurred for a Medical Officer to the Kirton District of the Boston Union.

A Medical Officer will be wanted for a Dispensary about to be established at Wandsworth.

A Medical Officer is required for the Dilwyn District of the Weobley Union.

MEDICAL APPOINTMENTS.

Mr. WM. E. LEE has been elected House-Surgeon to the Middlesex Hospital.

Dr. Charles Alex. Lockhart Robertson has been appointed Editor of the "Journal of Mental Science," vice Dr. Bucknill, appointed Visitor to Chancery Lunatics; and Dr. Thos. Harrington Tuke has been appointed General Hon. Secretary to the Association of Medical Officers of Asylums and Hospitals for the Insane, vice Dr. Robertson.

Dr. J. C. Dempster, Staff Surgeon-Major, has been appointed to act as Deputy Inspector-General of her Majesty's Hospitals in the Presidency of Bengal and Benares Divisions, and to take charge (in lieu of Dr. J. S. Prendergast, who was appointed temporarily) of the Inspector-General's Office at Calcutta, consequent on the departure for England of Dr. Tice, C.B., Deputy-Inspector-General of Hospitals (since deceased).

Dr. Robert Brent has been elected Medical Officer and Public Vaccinator for the Parishes of Otterton and Bicton, in the St. Thomas Union, Exeter, vice Mr. Wm. Huxtable, resigned.

Mr. Chas. H. Roper has been appointed Medical Officer to the Exeter Corporation of the Poor (Northern Division), vice Mr. Wm. Withal James, resigned.

Mr. Edwin Furse has been elected Medical Officer for the Bishop's Nympton District of the South Molton Union, Devonshire.

Dr. Thomas Blair has been elected Parochial Medical Officer for Dailly, Ayrshire, vice Dr. Alex. Blair, resigned.

Dr. Augustus Batt has been appointed Deputy Coroner for Oxfordshire.

Mr. Stephen Crocker has been appointed Dispenser to the General Infirmary, Leeds, vice Mr. John Hirst, resigned.

Mr. John Bourne Bromley has been appointed House-Surgeon to the Dispensary, Stourbridge, Worcestershire, vice Mr. Henry Horsley, resigned.

Dr. John Nagle has been appointed substitute for Dr. David Cremen as Dispensary Physician, Cork Union.

Mr. John Broadbent, Surgeon to the Workhouse Hospital, New Bridge-street, Manchester, has been appointed Surgeon to the St. Andrew's District, vice Mr. Thos. Wilson Dyson, deceased.

Mr. Smart A. Fothergill has been elected Medical Officer and Public Vaccinator for the Scalby District of the Scarborough Union, Yorkshire, vice Mr. Henry James Gunning, deceased.

Mr. John Roberts, of Tavistock, has been appointed Dispenser to the Sheffield Public Hospital and Dispensary.

Births, Marriages, and Deaths.

BIRTHS.

On the 28th ult., at Linfield House, Pallas-green, Co. Limerick, the wife of Charles F. A. Courtney, Esq., Surgeon R.N., of a son.

On the 30th ult., at Stratford-upon-Avon, the wife of Henry Kingsley, M.D., of a son.

On the 30th ult., the wife of John Johnson, M.D., of Tunbridge Wells, of a son.

On the 30th ult., at Colne Lodge, Cromer, Norfolk, the wife of J. Cooper, Esq., F.R.C.S.E., of a daughter.

On the 1st inst., at Mitcham, Surrey, the wife of Edward Marshall, Esq., M.R.C.S., of a daughter.

On the 2nd inst., at Petersham-terrace, South Kensington, the wife of Rich. Cockerton, Esq., M.R.C.S., of a daughter.

On the 4th inst., at Haslar, Gosport, the wife of Dr. David Dean, C.B., Inspector-General, of a son.

On the 4th inst., at Effingham House, Marquess-road, Canonbury, the wife of Robert Fish, Esq., M.R.C.S., of a son.

On the 5th inst., at Peel, Isle of Man, the wife of H. Higgins, L.R.C.P.E., of a son.

MARRIAGES.

On the 23rd ult., at the Parish Church, Kirk Braddan, Isle of Man, J. Nelson Cregeen, L.R.C.P.E., of Peel, to Miss Annie Page, of Derby-square, Douglas, Isle of Man.

On the 7th inst., at St. Margaret's, Westminster, John Charles Steele, M.D., Superintendent of Guy's Hospital, to Sophie, eldest daughter of Thos. Deane, Esq., of Westminster.

DEATHS.

On the 26th ult., at Mansfield, Notts, in the sixty-third year of his age, Samuel Hurt, M.D. This gentleman exhibited many sterling qualities during his forty years' practice in this town. An enlightened general practitioner, he added to the study of his profession the accomplishments of chemistry in its highest branches, and natural history; his favourite study of botany he continued to cultivate to the last, and was a large contributor to "The Flora of Notts," published by Wm. Howitt. He gained a reputation for operative surgery by first successfully treating in England a case of artificial anus, an account of which, with other papers, appeared in THE LANCET for September, 1833. He obtained his M.D. by examination in 1859. His life of usefulness was shortened by severe organic disease, causing for many months intense agony of mind and body. His death is lamented, not only by his bereaved family, but sincerely by his medical brethren, who invariably found in him a trustworthy and eminently truthful adviser in all cases of difficulty.

On the 6th inst., at Watford, Herts, Thomas Abel Ward, Esq., M.R.C.S., aged 68.

Medical Diary of the Week.

MONDAY, Oct. 13	ST. MARK'S HOSPITAL FOR FISTULA AND OTHER DISEASES OF THE RECTUM.—Operations, 1½ P.M. METROPOLITAN FREE HOSPITAL. — Operations, 2 P.M. MEDICAL SOCIETY OF LONDON. — 8½ P.M. Dr. John Cockle, "On Aneurismal Tumours involving the Neck."
TUESDAY, Oct. 14	GUY'S HOSPITAL.—Operations, 1½ P.M. WESTMINSTER HOSPITAL.—The following Operation will be performed at 2 P.M.:—By Mr. B. Holt: Excision of Elbow.
WEDNESDAY, Oct. 15	MIDDLESEX HOSPITAL.—Operations, 1 P.M. ST. MARY'S HOSPITAL.—Operations, 1 P.M. UNIVERSITY COLLEGE HOSPITAL. — Operations, 2 P.M. METROPOLITAN ASSOCIATION OF MEDICAL OFFICERS OF HEALTH.—4 P.M.
THURSDAY, Oct. 16 ...	ST. GEORGE'S HOSPITAL.—Operations, 1 P.M. CENTRAL LONDON OPHTHALMIC HOSPITAL. — Operations, 1 P.M. LONDON HOSPITAL.—Operations, 1½ P.M. ROYAL FREE HOSPITAL.—Operations, 1½ P.M. GREAT NORTHERN HOSPITAL, KING'S CROSS.—Operations, 2 P.M. LONDON SURGICAL HOME.—Operations, 2 P.M. WEST LONDON HOSPITAL.—Operations, 2 P.M. ROYAL ORTHOPÆDIC HOSPITAL. — Operations, 2 P.M. HARVEIAN SOCIETY. — 8 P.M. Mr. V. de Méric, "On Syphilitic Eruptions."
FRIDAY, Oct. 17	WESTMINSTER OPHTHALMIC HOSPITAL. — Operations, 1½ P.M.
SATURDAY, Oct. 18.....	ST. THOMAS'S HOSPITAL.—Operations, 1 P.M. ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1½ P.M. KING'S COLLEGE HOSPITAL.—Operations, 1½ P.M. CHARING-CROSS HOSPITAL.—Operations, 2 P.M.

To Correspondents.

Glyhor.—Modern pathology, it is true, looks towards the liver as the organ chiefly involved in the production of diabetes; but it is by no means settled that the *primary* cause of the exaggerated action lies in that organ. According to some high authorities, the abnormal action of the liver is but consecutive to a lesion of the nervous system. The well-known experiments of Claude Bernard, of puncturing the fourth ventricle, of dividing the medulla spinalis above the origin of the trisplanchnic nerves; the known influence of mental impressions on the progress of diabetes, and the occasional occurrence of glucosuria after injuries to the brain by concussion, &c., incline many to the belief that the affection in question is truly in its origin a neurosis.

FELLOWSHIP REGULATIONS.

To the Editor of THE LANCET.

SIR,—Allow me, through the medium of your columns, to direct the attention of students to one clause of the regulations relating to the Fellowship of the College by examination. It states that every candidate must produce certificates "that he has been engaged for six years in the acquirement of professional knowledge in recognised hospitals or schools, and that not less than three winter and three summer sessions thereof have been passed in one or more of such hospitals in London."

That the first portion of the clause is advantageous I admit; but in reference to the second, there cannot be a doubt but that it is detrimental to the interests of all the extra-metropolitan students. Why should the College recognise provincial schools for their Membership and not for their Fellowship? The principle is like that of a University recognising a school for its M.B., and not for its M.D.; but I believe there are no such Universities extant at the present day. Now that the London University has opened its portals, and offered to confer a first-rate degree in Medicine on all who can come up to her standard of examination, let also the College of Surgeons show liberality of sentiment, and bestow the same honour in the sister science, under similar auspices. It is a duty which they owe to the many distinguished teachers in the other metropolitan and provincial schools, and I hope that ere long the Council will see the propriety of altering the clause alluded to.

I am, Sir, yours obediently,

South Shields, October, 1862. MEDICUS.

B. (Brighton) would do well to address Mrs. Andrew, Institution for Nurses, North Audley-street.

C. C.—Such practices are objectionable; but it is difficult to find a remedy for them.

A QUESTION.

To the Editor of THE LANCET.

SIR,—I have a patient who is crippled with chronic rheumatism, and, in addition to his helplessness, is somewhat corpulent. Can you or any of your readers suggest what is the best mechanical apparatus to move him occasionally from his bed with as little pain as possible?

I remain, Sir, yours faithfully,

Torquay, October, 1862. AN INFIRMARY SURGEON.

*** One of the cheapest and most efficient apparatus is, we believe, the Nightingale cradle, recently invented by Mr. Dixon, of St. James's-place, Hampstead-road. It is not patented, and may be made for fifty shillings.

Naturalist.—It has recently been discovered that both uric and hippuric acids are to be found in the blood of the moth of the silkworm when the latter is diseased. These acids cease to show themselves when the insects are supplied with good food in the open air.

The Puckett Fund.—Dr. Stocker has forwarded to us £1 in aid of this fund.

ARTIFICIAL TEETH.

To the Editor of THE LANCET.

SIR,—Allow me to thank your two correspondents for their replies to my letter under this head in your number of the 13th ult.

The case related by Dr. H. C. Roods appears to be a modified one of my own patient, and I have no doubt his relative's symptoms will subside with the removal of the teeth, and, if properly carried out, I should like to know the result. "Facts are stronger than probabilities," as the doctor has very justly observed, and it is a rather startling fact that his relative "has not passed a week for six months past without being obliged to take astringents!" So with my own patient. And this brings me to make a few observations on the letter of Mr. Thos. Harding in your last impression. That he appears to have had a one experience in the application of the vulcanite, after his statements, I am free to admit; and he seems to speak very confidently of its innocence, as far as *his* knowledge extends. But I would respectfully ask him if *he* would be likely to be consulted for any disordered health that might arise in his numerous patients after his supplying the teeth? And if not, how could he ascertain what effect the wearing of the "vulcanite" might have? In the great majority of cases, the patients themselves (nor indeed their medical man) would scarcely dream of attributing their indisposition to the wearing of "false teeth" based on (as I firmly believe to some constitutions) a very objectionable and deleterious material, as originally manufactured, and consequently would not seek the advice of their dentists! As in my own patient, he did not go to his dentist with his ailments, the true origin of which was well nigh (as it might with others) being overlooked by me.

That the subject has engaged the attention of the dentists generally, who have been anxiously watching the results of this new material, I am well aware, having been informed by one of the leading men in this town, who, not so thoroughly satisfied of its harmlessness as your correspondent, Mr. Harding, has himself removed several sets of the old red vulcanite supplied by him from his patients, being convinced in his own mind, from their description, that the material was acting prejudicially on their systems, and doing them harm! This I had from the gentleman himself, voluntarily, on conversing with him upon the subject. That it is a most useful substance for purposes of nice adaptation, comfort and ease of wearing, is obvious, and, deprived of its noxious pigment (whatever it may be), would doubtless prove a great boon to both dentists and the public.

My patient's health is now rapidly improving, solely from the removal of his teeth; and though I have carefully investigated his case further, I can neither discover an "unhealthy state of the mouth," nor "any mercurial amalgam in diseased teeth" (of which he has none), as suggested by Mr. Harding, to account for the symptoms; and he is now so fully convinced of the true source of his impaired health of late, that nothing would induce him to place them in his mouth again in their present form.—I remain, Sir, yours truly,

Acock's Green, Birmingham, Oct. 1862. ENQUIRER.

Nemo.—We believe that weight of evidence is in favour of the opinion that the quadrumana do really possess a posterior lobe of the cerebrum, with its characteristic parts.

A. B.—Unfortunately such circulars are not uncommon. They are most unprofessional, and rarely effect the object intended.

CIGARS DE JOIE.

To the Editor of THE LANCET.

SIR,—With regard to the question propounded by your correspondent, "Ignoramus," respecting the "cigars de joie," their efficacy depends, I believe, essentially upon the fact that they are manufactured from, or in conjunction with, stramonium," which drug is, as "Ignoramus" doubtless knows, an antispasmodic, and much recommended in asthmatic cases.

A much simpler remedy, or I ought more properly to say palliative,—for, after all, the stramonium cigars do but relieve, and not cure,—is nitrate of potass. English-made cigars contain a greater quantity of this salt; so too, I fancy, do Manillas, and these latter are reported to contain a small quantity of opium, being prepared with a solution of the gum. But be this as it may, they certainly appear to afford relief in paroxysmal, or, as it is usually called, spasmodic asthma.

I may mention that blotting paper soaked in a saturated solution of nitrate of potass, and then allowed to dry, gives in many cases immense and instaneous relief when burnt and its fumes inhaled.

I am, Sir, faithfully yours,

October, 1862. CHARLES JOHN SMITH.

A Country Surgeon is quite right in concluding that the gentleman mentioned in what appears to be a puffing paragraph in a provincial paper had nothing to do with its publication.

A. F. G.—When green tea has been much coloured, it will usually impart a stain to white paper when rubbed upon it. The stain may be more readily detected if the paper be slightly damped. When pure and free from any bluish tint, the leaf is of a dark olive hue.

POOR-LAW SURGEONS.

To the Editor of THE LANCET.

SIR,—At a meeting of the Market Bosworth Board of Guardians, held on October 1st, to elect a medical officer for the Desford district of the Union, there were two applicants—one, a medical man, resident in a distinct Union (but who held the appointment previously, owing to there being no medical man residing in the Desford district), and myself, living in Desford, possessing the College diploma, and registered under the new Act. The Board re-elected their medical officer. And I ask is it to the interest of the sick paupers (for whose sole benefit these appointments ought to be made) that a medical man should hold office living at the respective distances of five, four, three, and two and a half miles from the villages forming the district? I had the votes of most of the guardians elected to represent the district.

I am, Sir, your obedient servant,

Desford, near Leicester, Oct. 1862. FRANCIS GREEN.

Mr. J. F. Elsom.—It is difficult to understand how the refusal of the Coroner to hold an inquest can enlighten a surgeon as to the cause of death. It would be interesting to know what was the nature of the certificate given.

No Cutter is evidently no "conjuror."

EXTRACTION OF CATARACT BY LOWER SECTION OF CORNEA.

To the Editor of THE LANCET.

SIR,—In your "Mirror of Hospital Practice" of September 27th, I read some clinical remarks by Mr. Ernest Hart upon two cases of cataract extracted by inferior keratotomy, where he speaks of this method as "having many practical advantages over the superior section."

As I have a case in hand which corroborates Mr. Hart's observations, will you permit me to report it in your valuable columns:—

Mrs. K——, of this town, aged eighty-five, who had been affected with double cataract, had six years ago been operated upon the right eye by depression. Immediately after the operation she had an attack of intra-ocular inflammation, the residue of which harassed her for several months subsequently, whilst her sight was but partially restored. She applied to me for an operation upon the left eye. Finding the eyes much sunk in the orbit, and unable to look downwards, thus rendering superior keratotomy impossible, I extracted the cataract on the 21st September by the inferior section. The eye was dressed with court plaster until the fifth day, when I found that union had taken place. On the tenth day I found the eye in so satisfactory a state that my attendance was no more required. On the fifteenth day after the operation she could read some verses in the family Bible with the proper lenses.

Although in this case I have adopted this method from mere necessity, yet the satisfactory result encourages me to resort to it, not only in sunken eyes, and in cases of inability to look downwards, but also where I have to operate upon a strongly developed arcus senilis; for it takes some months before the unsightly cicatrix upon a fatty deposited portion of the cornea disappears, whilst in the lower corneal hemisphere, which is free from that deposit, all trace of the wound disappears very soon.—I remain, Sir, yours, &c.,

Montrose, October, 1862. J. R. WOLFE, M.D.

Dr. Edwin Payne.—Under such circumstances, in future it will be well to beware of signing the receipt until the Coroner's officer has actually paid the fee. Dr. Payne has just cause of complaint, and the fee should be forwarded to him without further trouble.

FEMALE APOTHECARIES.

To the Editor of THE LANCET.

SIR,—In your impression of the 4th instant I find the name of "Elizabeth Garrett" as having passed the preliminary examination in Arts at Apothecaries' Hall. Doubtless this eccentric lady thinks she has now obtained an entrance into the profession; but I would suggest that the following passages of the Apothecaries Act, 1815, must put an end to her medical aspirations:—

"And to prevent any person or persons from practising as an apothecary, without being properly qualified to practise as such, be it further enacted, that from and after the 1st day of August, 1815, it shall not be lawful for any person or persons (except persons already in practice as such) to practise as an apothecary, unless *he* or *they* shall have been examined by the said Court of Examiners, or the major part of them, and have received a certificate of *his* or their being duly qualified to practise as such." "Provided always that no person shall be admitted to such examination until *he* shall have attained the full age of twenty-one years." And again, "Provided always, and be it enacted, that no person shall be admitted to any such examination for a certificate to practise as an apothecary, unless *he* shall have served an apprenticeship of not less than five years to an apothecary."

And the Act goes on to speak of a candidate giving notice of *his* intention to present *himself* for examination.

With expressions so plain as to the sex of candidates staring them in the face, I cannot see how "the powers that be" at Apothecaries' Hall can attempt to examine Miss Garrett without the passing of a supplementary Act, enacting that ladies be included in the provisions of the present one.

I shall feel obliged by the insertion of this in your next impression, as the subject is one that appears to me to require ventilation, the realms of medicine being threatened with an invasion of Amazons. Just imagine the predicament in which a man might be placed by having to meet one of these lady apothecaries in consultation. Yours obediently,

East Suffolk, October, 1862. AN UNQUALIFIED ASSISTANT.

Query.—The scientific name of the late curious addition to the Zoological collection at the Regent's Park is Cheiromys Madagascariensis. The aye-aye is a nocturnal animal, and we are indebted for the present specimen to Mr. Edward Mellish, of the Mauritius.

CHELTENHAM OPHTHALMIC INFIRMARY.

To the Editor of THE LANCET.

SIR,—It is now four weeks since your annotation appeared on the recent election of surgeon to the Ophthalmic Infirmary of this town. Although that length of time has elapsed, and consequently every opportunity has been given, no reply has appeared to the strictures which you thought proper to make on the conduct of the Board of Management of the above institution.

I certainly expected no reply, as the Board no doubt feel that any attempt at a defence of their conduct would only tend more clearly to bring into light the injustice of their proceedings. I here, however, challenge the Board, or rather the medical members thereof (for on them rests the responsibility of the act) to give any justification of their conduct that the profession will accept. Were they, however, candidly to explain their rule of action, they would be obliged to speak somewhat thus:—

"Rule XIV. requires candidates to bring a certificate of attendance for six months at an ophthalmic institution of repute; but the rule does not specify any particular institution. Therefore we, as medical members of the Board, were appealed to, to declare whether the candidates in the certificates sent in fell under the required category. Now, we chose to consider that the Eye Infirmary of Guy's Hospital does not come up to the mark. You and the whole profession may tell us that it does. But what is your opinion to us? We had the power at that Board to decree otherwise, and it was decreed accordingly. Did we announce that such would be our decision before we advertised for candidates, did you say? No, of course we did not; for how could we tell how we should decide until we knew who would be the candidates. What foolish questions you ask!" I am, Sir, yours, &c.,

Cheltenham, October, 1862. T. MORLEY ROOKE, M.D.

THE TITLE OF "DOCTOR."

To the Editor of THE LANCET.

SIR,—Allow me to ask whether your correspondent who signs himself "Another Censor," in THE LANCET of August 16th, has not laid himself open to an action for libel? "Censor" states in his letter (referring to the bye-law of the College of Physicians), "They all have taken this oath. How then can they, in direct violation of the oath they have taken, put Dr. on their door, knowing they subject themselves to a fine of £10, or to being degraded?"

Now, Sir, THE LANCET is a journal which is read by many private individuals, and the *false* statement made by "Censor" must necessarily have an injurious tendency towards a large body of physicians, whose position in society is inferior to none in the profession.

Several letters have already appeared in your columns, refuting the iniquitous attempt to show that the Members of the College took the oath referred to. How could they take an oath to obey a bye-law which was not in existence when they "all" passed the College examination? And is it reasonable to suppose that any person in his senses would take an oath to obey any bye-law the College choose to make? Has the College power, for instance, to compel Fellows and Members to commit suicide? The public might infer from "Censor's" letter that the Fellows and Members or old Licentiates never had the title of Doctor conferred upon them; but there are many who can testify to the *truth*, which will rise up in justification against slander.

If "Censor" is actually a Censor of the College, he must be well acquainted with the courteous mode of address adopted by the College authorities towards the physicians who had not graduated at a University; and he must be also aware that the diploma granted to Members or old Licentiates is a powerful weapon of defence, giving them power to enjoy "all honours, titles," &c.; but in addition to this, a physician, licensed to teach as well as to practise physic, is synonymous with Doctor of Medicine—i. e., teacher of physic. Admitting, however, the non-legality of this interpretation, there is sufficient evidence to show that the Members of the College have not sailed under false colours; nor do they lay themselves open to a "fine or to be degraded," as "Censor" has endeavoured to show, by using the title of Doctor.

The new bye-law recently published in THE LANCET is very indefinite as relates to the University grade which a Fellow or Member must hold in order to use the prefix Dr.; and the profession have a right to know whether the degree, that *sine qua non*, must be M.A., B.A., M.B., or M.C., to prevent the infliction of a fine or degradation! as pointed out by "Censor" and "Another Censor." I am, Sir, your obedient servant,

October, 1862. SELF-DEFENCE.

To the Editor of THE LANCET.

SIR,—I cannot understand by what process of reasoning "A Tory Physician" holds that a M.R.C.P. or L.R.C.P. is *legally entitled* to the title of Doctor. I admit that it has been the custom to call him Doctor *by courtesy*, on the same principle that we call sons of certain noblemen "Lord;" but I was not prepared to meet with any gentleman who at this time of day would argue that it was his by *legal right*. Most certainly no medical qualification, except the degree of M.D., confers *legally* the title of Doctor. It were throwing words away to try to convince such as adopt the logic of "A Tory Physician."

Nor can I coincide with your correspondent in his sneer at the Universities of Aberdeen and St. Andrews. He speaks in ignorance, and may therefore be pitied and pardoned. Whatever may have been the value of the qualifications formerly conferred by these Universities, I am in a position to know that it is no disgrace for the licence even of the College of Physicians of London, his is as it is, now to rank *after* the degree of these Universities. The examinations conducted at these and the other Scottish Universities are in every respect a fair test of the candidate's ability, and are certainly not inferior in at least *professional* knowledge to those of the English Universities.

The Scottish Universities' Commissioners have, under the recent Act of Parliament, re-arranged and equalized the curricula and examinations at all the Scottish Universities. These ordinances are already in force at them all, except St. Andrews, where, however, they also take effect at the close of the present year. The examinations are conducted by the Professors, each in his own department, and, in addition, by three Assessors, chosen annually by the University Court. The degrees of Bachelor of Medicine (M.B.) and Master in Surgery (C.M.) are not conferred on any one (if he has not a degree in Arts) who does not pass a searching examination in Arts in the subjects prescribed, a list of which appeared in the Students' Number of THE LANCET. The degree of M.D. is to be conferred (except at St. Andrews during the present year) on candidates having the degree of M.B., after further probation and examination. In short, the examinations, as now conducted in Scotland for University degrees in Medicine and Surgery, are such as to entitle Scottish graduates to a place in the highest rank of the profession.—I am, Sir, your obedient servant,

October, 1862. DOCTOR.

COMMUNICATIONS, LETTERS, &c., have been received from—Sir Ranald Martin; Prof. Longmore, Chatham; Mr. Seymour Haden; Mr. G. Smith; Mr. Keele; Dr. Abbotts Smith; Mr. Maclean, Dundee, (with enclosure;) Mr. Fletcher, Liverpool; Dr. Silvester; Mr. Woodgate; Dr. Higgins, Peel; Dr. Wyman, Harlow; Dr. Scott; Dr. Leslie, Carrickmacross; Mr. Forshaw, (with enclosure;) Mr. Davis, Callington, (with enclosure;) Mr. Beynon, (with enclosure;) Mr. Drewe, Bampton; Mr. Roberts, Castell; Mr. Newman; Mr. W. E. Lee; Mr. Flynn, (with enclosure;) Dr. Wolfe, Montrose; Mr. Howe, Hullerhirst; Mr. Pollard, Rastrick, (with enclosure;) Dr. Grally Hewitt; Mr. T. Godfree, Mansfield; Mr. G. N. Smith, Wolverhampton; Mr. Green; Mr. Underwood; Dr. Payne; Dr. Cregeen, Peel; Dr. Gilchrist, Aberdeen; Mr. Jennings, Anston; Mr. Mackreth; Mr. M'Cormick, Brighton, (with enclosure;) Mr. Hunt, Dorchester, (with enclosure;) Mr. Hicks, East Bergholt; Mr. Edwards; Mr. Wm. Bennett, Wellington; Mr. Soelberg Wells, Thorpe; Mr. Rayner, Chorlton, (with enclosure;) Mr. B. Lister, Littleborough, (with enclosure;) Mr. Waters, (with enclosure;) Dr. Johnson, Tettenhall; Mr. Clarke, Huddersfield; Dr. Dick, (with enclosure;) Mr. Jones, Llandovery; Mrs. Reede; Mr. Harris, Redruth, (with enclosure;) Mr. Farr, Hemel Hempstead; Mr. J. Parkin; Dr. Stephenson, (with enclosure;) Mr. Hale, (with enclosure;) Dr. E. A. Parkes; Dr. Kebbell, Brighton; Mr. Stephens, (with enclosure;) Dr. Jones, Holyhead, (with enclosure;) Mr. Taylor, Alderney, (with enclosure;) Mr. Hepworth, (with enclosure;) Mr. C. J. Smith; Mr. J. F. Elsom; Dr. M. Mackenzie; Dr. Dundas Thomson; Dr. Hillier; D. C. B., Oban; M.; Self-Defence; No Cutter; An Unqualified Assistant; Doctor; G. H.; J. S., Islay; Physician; Enquirer; Nævus Maternus, Æsculapius; A. Z., (with enclosure;) A. B.; Quæsitor; Medicus, South Shields; &c. &c.

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